

MUSHROOMS RUSSIA AND HISTORY

BY

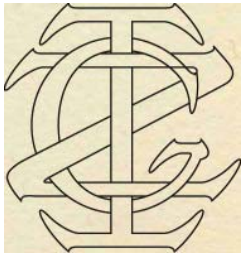
VALENTINA PAVLOVNA WASSON AND
R. GORDON WASSON

VOLUME I



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MUSHROOMS, RUSSIA AND HISTORY

PREFACE

THIS book is addressed to those who love mushrooms, who love the whole rich world of wild mushrooms in the same way that many love the flowers of the field and the birds of the air. Our public is certainly one of the smallest in the English-speaking world, but no matter. We invite all to share our joys, and if few respond, we are not less happy for being few to savor the secret.

There is no shortage of writings about wild mushrooms. But in English and all other languages save French the thousands of pamphlets, books, and journals on this subject seem to fall naturally into one or the other of two clusters. Around one pole are gathered the manuals that teach beginners how to tell the species apart, and around the other are the treatises written by mycologists solely for other mycologists to read. Ours is one of the few books about mushrooms written for connoisseurs by amateurs. It is the first treatment in any language of the role played by mushrooms in the daily lives of the varied European peoples.

Strange disparities mark the attitude of these peoples toward mushrooms. There is a deep repugnance for 'toadstools' among the folk that dwell around the shores of the North Sea. The persistence of this repugnance bears witness, if witness were needed, to the extraordinary toughness of an emotional heritage coming down from remotest times. The 'mycophobia' of the North Sea peoples remains unshaken in the face of continuous exhortations, stretching over the past hundred years, from well-informed men of science. We suggest to the anthropologists that they will do well to include always in their cultural valuations the question whether a given people is 'mycophile' or 'mycophobe', and if 'mycophagous', what species they eat and love. Here is a subtle criterion for comparative observations all the more valuable because pitched on a lowly level, where man's superior faculties and conscious preoccupations seldom warp the ancient grain of impulses passed on to children in their early years.

Our essays began as a mere footnote on the gentle art of mushroom-knowing as practiced by the northern Slavs - a footnote in a larger work that was to have dealt with the Russians and their food. The footnote grew, and rose in status to a place in the body of the text, and then mushroomed into a whole chapter, and finally one chapter by fission made five. The manuscript has burst all its seams through successive revisions. If occasionally we wander from our theme, we hope the reader will be indulgent, bearing in mind that what we have written has been for our own pleasure in the spare hours of a busy life. And

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besides, to play a variation on a familiar French saying, *je reviens toujours a mes mousserons*; which is to say, we always hark back to our mushrooms. In a time of troubles and darkness, we wish this book to be a garland offered in tribute to those warm, rich qualities of the Russian people that wicked tyrants strive in vain to crush and extirpate.

The reader who girds his loins and stays our course to the end will perceive a progress in the range and depth of information as he proceeds from chapter to chapter. This is because he is following in the authors' footsteps. The chapters have been composed over a number of years, roughly in the order in which they appear; and because they break new ground in subject and treatment, it has seemed best to let them stand as they were written, for the reader to share in the sense of adventure that the authors experienced in navigating along uncharted coasts of cultural history, never knowing what fresh discovery lay just ahead.

Our subject takes us into history and folklore, into mythology and philology. The interloper treads these thickly-mined areas at his peril. We accept the risk, armed only with the caution that accompanies a full awareness of danger. We have tried to take counsel with the best authorities, and to shade our statements to conform to the evidence. We are more aware than our readers will be of the many areas of our subject that we have failed to explore. We wish we might without presumption draw an analogy between our book and those paintings of Watteau's where only a few patches of the canvas are illumined against the broad expanse of an undefined and shadowy background.

It is altogether fitting for an author to set forth his indebtedness to others, and we should do so fully here, were not the list so long and weighty that it would be unseemly and misleading on our part to associate such names with our efforts. The extent to which we have leaned on persons more knowledgeable than we will be apparent to all who know us. The patience of the learned fraternity with our questions has amazed us. Doctors and lawyers and engineers ask fees for their professional advice. But it seems that men of learning, like men of God, stand above these others, bestowing their counsel and blessings freely on all who turn unto them. In the bibliography and notes we have tried to pay our debts in full, and also to meet the needs of the more curious reader.

Without my husband's enthusiasm and help this book would never have come to term, and I insist on making clear that he is personally responsible for the recondite lore concerning toads, vanished words, poisons, and many other matters in chapters IV and V. The first-person pronouns in our text shift occasionally, and in chapters IV and V regularly, from the singular to the

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plural: there is method in this, for the plural pronouns usually evidence my husband's contributions to our joint undertaking.

We gladly make special mention also of our debt to Roman Jakobson, the Samuel H. Cross Professor of Slavic studies at Harvard University, who combines in equal degree vast erudition in things Slavic, exquisite standards of scholarship, and the infectious enthusiasm of the inspired teacher. Desiring to determine what the Basque language might have to contribute to our theme, we solicited the counsel of Professor Rene Lafon, holder of the Basque chair at the University of Bordeaux. Generously he lent us his collaboration in what he considered a novel area for research, and in a series of communications, admirable for their blend of imaginative insight and scholarly discipline, he undertook to explore with us, for the first time in Basque scholarship, the rich and tantalizing Basque mushroom vocabulary. Some of the fruits of that epistolary interchange will be revealed in the ensuing pages, but it is to be hoped that Professor Lafon himself will find time to incorporate the full results of our joint endeavors in a monograph that he alone is qualified to compose. We are specially beholden also to Robert Graves, novelist, scholar, and poet, who supplied to us, among other brilliant suggestions, the missing link that we had been seeking in order to round out our own conjecture concerning the death of the Emperor Claudius, and to render that conjecture not merely suggestive but (we make bold to hope) persuasive. We believe that by re-reading the age-worn texts in the light of present-day knowledge, we can state with some assurance exactly what lethal agents were used when, at the behest of the Empress Agrippina, Locusta undertook to dispose of Agrippina's august spouse. We are under obligations to many libraries for their cooperation, but most of all to The New York Public Library, equally rich in its treasures and in its always courteous and efficient personnel—a unique institution, which the community on whom it depends fails to esteem at its priceless worth.

We reserve the last paragraphs of this preface for our illustrations. The whole world knows that Jean-Henri Fabre was a close observer of insects, a distinguished writer, and a person of rare spiritual quality. Only a few know that he devoted many hours of his life, in the decade that followed 1885, to painting mushrooms in water-color. His accurate observation was matched by his artistic sensibility. Today hundreds of these pictures lie on the shelf of his study at Serignan in the Provence, as fresh in color as the day he painted them, on excellent stock, assembled neatly in the folders where he laid them. He painted all his mushrooms in their natural size, save one that was too big for his paper and that he never succeeded in identifying. During his life-time he sought a

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publisher for them, but when he failed to obtain the assurance that the colors would be truly rendered, he chose to leave them, on the shelf. He wrote little about mushrooms, but in *The Life of the Fly* he said they were his botanical joys from his earliest youth, and he went on to predict sadly that the pile of hundreds of sheets of his paintings would eventually be shifted from cupboard to cupboard and from attic to attic, to become dirtied and stained and for rats to gnaw, until finally they would fall into the hands of some little grandnephew, to be cut into paper caps.

The home of Fabre is now the property of the State, and comes under the jurisdiction of the Museum National d'Histoire Naturelle, Paris. To that institution we turned, and through the intercession of the Director of the Laboratoire de Cryptogamie, Professor Roger Heim, Membre de l'Institut, the Assemblée des Professeurs of the Museum graciously granted to us the privilege that we sought.

In May 1950 my husband undertook a pilgrimage to remote Serignan to see the Fabre water-colors, and he picked out more than a dozen for our book. Two years later, finding himself again in Paris, he called once more on Professor Heim, who by now had become the Director of the Museum National, a worthy successor in that great post to the illustrious Buffon. Indeed, he sits at Buffon's very table, in Buffon's very room, where the elegant 18th century furnishings have remained unchanged, the walls adorned with the graceful 18th century oils of Jean-Jacques Bachelier, depicting the birds of the several continents. The Museum National d'Histoire Naturelle is one of the fine expressions of French cultural achievement, wherein advanced research and teaching in the natural sciences are always suffused with a deep understanding of the humanities. In Professor Heim the Museum National has once again found a chief who combines in the highest measure those rare qualities of mind and heart that have long distinguished the faculty of that extraordinary institution.

Professor Heim proposed to my husband a second visit to Serignan, and this time he himself could go too. Thus it came about that in July 1952 I joined them, and together we set out for the Midi, driving by easy stages so as to enjoy the lovely and storied landscapes through which we passed, and the food and wines as well. (Alas, around mid-July there is a dead-spell in the procession of mushroom growths, and we found none on the menus of the hostelrys where we stopped.) Finally we arrived in the village of Serignan.

When Fabre had acquired his *harmas*, as any miserable patch of arid land such as his was called in his native Provençal tongue, it was a waste, but with the passing years the bushes and trees that he planted have grown to their full height, beneath their foliage his fountain plays quietly in the basin, and what was long

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ago the parched *harmas* has grown into one of the most enticing, shaded recesses of the warm and caressing countryside of Provence. Fittingly, the property is in the custody of Henri Fabre's son Paul, and to this day it is called *I'Harmas*, though this is become a misnomer.

In Serignan, with Professor Heim's help, we selected ten additional water-colors. Henri Fabre had not of course our needs in mind, and so it happens that in his whole wonderful collection we found no examples of two species of mushrooms about which we speak at length, the boletus asreus and the tricholoma georgii or gambosum. By way of compensation we reproduce a number of water-colors that are unrelated to our text, solely for their beauty. Professor Heim has been our guide in the scientific designations that we apply to the species pictured by Fabre.

At our request the Museum National handed over the water-colors that we had chosen to the atelier of Daniel Jacomet in Paris, for reproduction in their original size by the pochoir process. We should like to think that Henri Fabre, could he see the results, would be well pleased.

VALENTINA P. WASSON

New York, October 1953

VOLUME I

I

MUSHROOMS AND THE RUSSIANS

Mushrooms... the poor man's food, the rich man's dainties.

SAMUEL COLLINS, *erstwhile physician to the Tsar, in 1671.*

I CANNOT recall the time when our mother first began to send us out into the woods and fields to gather mushrooms for the family table. In the summer of 1909, when I was almost eight and my sister was nearly seven, we were spending our summer holidays at a village called Majorenhof, near Riga on the Baltic Sea. We were surrounded by pine groves, the ground carpeted with needles and with blueberry and bilberry bushes. What a delight it was for Tanya and me to ramble through the clean, fragrant woods, filling our baskets with those aristocrats of the mushroom world, the noble *belye griby* \

We were already proficient mushroom gatherers then, and we must have begun our apprenticeship long before. Our mother, Xenia Dimitrievna, was even more solicitous about her brood than most mothers, yet it never occurred to her to poison our young minds with warnings about 'toadstools'. All Russians know the mushrooms, not by dint of study as the mycologists do, but as part of our ancient heritage, imbibed with our mother's milk. A Russian nursery rime, tenderly humorous, tells of the mother who sends out her toddler to look for the *borovik*. Each time he returns with the wrong kind, perhaps a good kind, perhaps bad, but never the *borovik*. Each time she repeats her previous instructions, adding however an additional line of descriptive advice. In the end, off goes Mother herself, impatiently, and there, almost on her doorstep, she discovers a family of the ones she seeks.

We Russians love the whole mushroom world, and what a world it is! Almost endless in variety, every species expressing its individuality by its size and shape and stance, in the beauty of its evanescent colors, in the delicate perfection of its gills or pores or skin that are a joy to touch, and usually too in its scent and taste. The evil kinds, how they flaunt their wicked grace, like the harlots that they are! But we are fond even of them, in a way. Where is death more plainly writ than in the greenish pallor of the elegant *amanita phalloides*, the 'destroying angel' 2 Where is to be found a better portrait of the Scarlet Woman than in Europe's *amanita muscaria*, the 'fly *amanita*'2 (As oftentimes happens with scarlet women, worse things by far are said of this dazzling wanton of the mushroom

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family than she deserves.) Mushrooms there are, such as the *clathrus cancellatus*, so strange of line and hue that he who for the first time sees them is struck incredulous: can such things really be?

This love of Russians for the earthy tribe of mushrooms is, I suggest, a distinctive trait of the Slavs and a significant one. In the face of an ever mounting flood of printed matter and talk about Russia, that land remains for the English-speaking world as deep an enigma as ever. If among those who seek the key to the enigma there be some with an understanding heart and a poet's insight, let them lay aside for a while most of what is written and uttered, and consider the lesson in Russian history and Russian ways that the mushroom has to teach. Here is evidence of our visceral attachment to the bounteous soil that is our Mother Russia. In America, the hospitable land of my adoption, we sing hymns to our rocks and rills, to our wooded hills, but many, I think, sing with their voices and not with their hearts, for our rills we pollute and in our great paper mills we are speedily converting those wondrous forests into the stuff of which comics are made.

In France and Italy the peasants know many of the mushrooms and possess a rich vocabulary for them. The Germanic peoples are less informed than the French, and there is evidence that what they know is of modern acquisition. But when the traveler reaches the lands of the northern Slavic peoples and the Lithuanians, the folk knowledge concerning mushrooms broadens and deepens until it reaches astonishing proportions. The Russians find it as natural to know the mushrooms and to avoid the deadly kinds as do most Americans to distinguish poison ivy from other creepers. Take our family for instance. We were Muscovites. My parents belonged to the Russian intelligentsia, and were city bred. We children spent most of our childhood in the immense cities of Moscow and St. Petersburg, and only our vacations in the country. Yet to no one in all Muscovy could it have seemed strange that Tanya and I, and all our little playmates, made ourselves useful, when in the country, by gathering various kinds of mushrooms and bringing them home in childish rivalry and glee to the kitchen. When we were naughty, our mother would punish us by forbidding us to go mushrooming.

The Catskill Mountains in August are filled with mushrooms, exquisitely beautiful. (We Russians are always finding mushrooms wherever we go, even where our American friends tell us there are none.) In 1927 I had just married my American husband, and we were spending our first holiday in the lodge of Adam Dingwall, a friend, near Big Indian. With what astonishment my husband saw me, on our first walk, dart with ecstasy to this fungus and that,

PLATE I

Jean-Henri Fabre. *Boletus edulis* Fr. ex Bull.
French: *cepe de Bordeaux*; German: *Steinpilz*;
Italian: *porcine*; Russian: *belyi grib*.



PLATE II

Jean-Henri Fabre. *Coprinus comatus* Fr. ex Miill.

French: *pisse-chien*.



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and on bended knee strike what seemed to him poses of adoration! With what horror he strove, unsuccessfully, to keep me from bringing home and eating a mess of fragrant *lisichki*! He behaved, as we both at once perceived, like the hen that has hatched ducklings and sees them swim away.

An absorbing work, perhaps rich in historical significance, needs to be written on the role of the mushrooms in the life of the peoples of Europe. There are already many scientific treatises on mycology, as the study of the fungi is called, but none on the cultural implications of the mushroom world in the history of our European ancestors. For every region there should be determined which mushrooms are familiar to the people of the locality, and what names they use, and how they prepare them for food, and the folklore attaching to them. Our theme is elemental, reaching back into the folkways of pre-history, and such a mushroomic map of Europe might well confirm folk-ties hitherto merely suspected, and disclose others. If only one could travel today throughout the Slavic lands in the mushroom months, traveling close to the moist Mother Earth, gathering mushrooms with the peasants, identifying them by their local names, eating them according to local recipes, assembling the folklore about them, and trying to catch their delicate beauty of line and color with paint and brush! When I was a child, anyone with the inclination and leisure could have indulged in this idyllic pursuit to his heart's content.

To what a world of wonder and delight the fungal vocabulary of Russia transports us! Every mushroom, good or bad, comes under the general name of *grib*. When the farm-boy of the American prairies returns home after a hard day hungry for his 'grub', he is using in all likelihood a word with the same origin as the Russian peasant child who gathers his *griby* in the woods. Both words go back to a prehistoric root of the Indo-Germanic tribes that expressed the scratching and stirring and rooting and grubbing of the soil which gave to primitive man his vegetable food. Our archeologists piece together meanings deduced from the rubbed and worn artifacts of peoples who died long before the spoken word could be committed to posterity by writing. But the very words that those peoples spoke also come down to us, Likewise rubbed and worn, their sounds and meanings slowly changing on the tongues of numberless generations, yet still identifiable. In the linguistic cousinship of 'grub' and the Russian *grib* we see one example, out of an infinite number, of the common cultural heritage that unites at the deepest levels the Slavs and the West, kindred stock of one great Indo-European family.

Of the poisonous mushrooms, only one species in the Russian language bears a common name - the *mukhomor* or fly-killer, the *amanita muscaria* of science.

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In America this knave wears a yellow cap necked with warts, but throughout Europe its color is a splendid red, and only one blind to nature's warnings could be seduced by its meretricious allurements. All merely tasteless or insignificant mushrooms we dismiss with affectionate contempt under the term *poganki*, the 'unworthy ones' or, as some interpret the word, 'little pagans'.

On the lowest level of culinary value we lump together a miscellaneous lot of gilled mushrooms by the name *syroezhki*. They can be eaten raw, as the name says, though seldom are they so eaten. To this humble group rightly belongs the common field mushroom, a poor thing owing its undeserved renown to a weakness in its character that makes it unique - it alone in the mushroom world of Europe and America stoops to man's will by lending itself to commercial cultivation in a big way.¹ Among Great Russians, this people pre-eminent in 'mycophagy' or mushroom-eating, the field mushroom enjoys little standing, not even possessing today a commonly used native name, being called *champignon* after the French. When gathered fresh in breeze-swept pastures, it still possesses traces of distinction, but through mass production on shelves in darkened cellars under controlled and uniform conditions the market product has long since lost such virtue as its wild ancestors once had, until today it is truly the slattern of the mushroom world, a sickly simulacrum of what mushrooms should be. (Actually, the cultivated mushroom and the field mushroom belong to different though closely related species. The beginnings of commercial cultivation offer a minor mystery. The French discovered the secret around Paris, whence the name *champignons de Paris*, but the exact time is unknown. There is a reference to them in *Le jardinier fran^{ois}*, a book by N. de Bonnefons published in 1651. It seems likely that the art had sprung up in the previous half century. When Francis Bacon assembled his data for his *Sylva Sylvarum*, published in 1626, this well informed Englishman had never heard of cultivated mushrooms, for he wrote that a strange property of mushrooms is 'that they come up so hastily, as in a night, and yet they are unsowne'. It is clear also that John Parkinson when he wrote his *Theatrum Botanicum*, published in 1640, was similarly unaware of the procedures for inducing field mushrooms to grow.)

Of the distinguished mushrooms, the first to appear in the spring of the year are the *smorchki*, or morels. They are not uncommon in America too, but in the New World they are gathered and relished almost solely by transplanted sons of Europe. This is especially remarkable since no one could mistake so

I. We are aware that the Italians in certain localities raise the *clitocybe catinus* and the *polyporus tuberaster*, but only on a modest scale. In Japan, however, the cultivation of the excellent *shiitake* is as important as the *champignon* industry in the West.

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distinctive a mushroom, standing erect as it does with its honey-combed top-knot exposing its windows to the breezes.

Through summer and fall the variety of succulent mushrooms that Russians gather is considerable. In ascending order of excellence, we begin with the *opjonki*, the mushrooms that nourish on dead tree stumps. These are of various kinds, but the classical *opjonok*, or *opjonka*, is the common ink-cap, a delicate and lovely mushroom, the perfect expression in color and texture and line of transitory grace. For the span of a few hours these beautiful creatures, their highly convex bonnets supported on spindly legs, toss jauntily in the air, and then, by the action of their own enzymes, they curl up and dissolve into inky fluid. Large numbers often grow in a single colony, each day bringing forth a new generation. They must be cooked the instant they are gathered. More substantial is a second kind of *opjonka*, the *armillariella mellea* of the mycologists. Large and fleshy, they lend themselves to drying. They too grow in family clusters, but less populous than the ink-caps; in Italy the peasants by happy inspiration call them, with an affectionate diminutive, the Holy Family - *famigliola buona*.

The mushrooms with a moist and sticky surface, which the English-born person is quick to scorn as 'slimy', the Russians by a reverse semantic twist praise as the 'buttery ones'- the 'fat-of-the-earth', as Samuel Collins, erstwhile physician to the Tsar, put it in his book, *The Present State of Russia*, published in 1671. These are the *masljonki* and *masljaniki* of the Russian kitchen, from the word *maslo*, meaning butter. Perhaps somewhat higher in the scale of merit are the *Hsichki* and the *ryzhiki* - the 'little foxes' and the 'rusty ones'. The former are the chanterelles of the West. Few are the sights that nature offers more gladdening to the eye of man than a colony of chanterelles on the shaded floor of an evergreen forest, their brilliant yellow cups spattering a carpet of dry, dun-colored needles. True, they dance not, but for Russians they laugh like dancing daffodils. With fluted stems, they look like yellow parasols, blown inside out. Good as they are to eat, their beauty in their native setting transcends their taste. With Russians the chanterelle holds a more humble place in the hierarchy of mushroom values than among some of the Western peoples who know their mushrooms less well. The folk of Norway and Sweden - countries that abound in mushroom life - think of the chanterelle as the one edible mushroom of the forests, which goes to prove that an abundance of mushrooms does not suffice to bring about familiarity with them. The chanterelle is common in America. It is pungent and unpalatable until cooked.

For the table, in my opinion, the chanterelle must yield pride of place to the *ryzhik* - identified by the lexicons with the *lactarius deliciosus* but in fact

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embracing several of the edible lactarii - a fleshy mushroom whose funnel-shaped cap is handsomely marked by concentric rings of red. We Russians love our *ryzhiki*. This is the famous mushroom that we gather in immense quantities and eat with affection and gusto. We prepare it in many ways, but chiefly we like it salted and pickled. By tradition the various Finnish peoples are not mycophagous, but the peoples of Finland and Estonia have learned from the Russians in modern times to harvest the *ryzhiki* of the forests and add them to the family menu. *Ryzhik*, as we have said, means the 'rusty one', a name derived from the color of the cap. At the other end of Europe the Catalans in their language have hit on the identical figure of speech: thus the *rovello* of Barcelona is our *ryzhik* - the word means the same thing, and the mushroom is almost the same. The Catalan prizes this mushroom highest of all: he honors it above the *cepe de Bordeaux*. He puts his mess of *rovellons* into a frying pan of very hot oil, and on top of the mushrooms he adds tomatoes and garlic and parsley and sausage made from pork, and after cooking the whole for ten minutes or less over a slow fire, he sits down to a dish that he considers fit for the gods. In Spanish the name of this classic mushroom is the *mizcalo*, apparently a pre-Latin word, indigenous in Iberia, its verbal kinships lost in antiquity. The very antiquity of this word bears witness to the hold that the mushroom has on the people of Castile. The peasants in the noble Sierra de Cremos, to the west of Madrid, know the *mizcalo* well: they harvest it regularly and sell the crop to gentlemen who come out from Madrid to buy it for re-sale elsewhere in Spain and abroad.

As I said before, the lexicons tell us that the *ryzhik* is the mushroom known to science as the *lactarius deliciosus*. I shall let this identification pass for the present, merely remarking that a strange confusion bedevils the terminology here, a confusion that must be laid at the door of a naturalist who blundered. Later I shall try to untangle the error.

The *gruzdi* are another famous mushroom tribe in northern Russia. This is the name properly belonging to the large, white, fleshy *lactarius piperatus*, but apparently some Russians also use it for other lactarii and even some *rusulae*. The word itself is peculiar to the Russian language (including White Russian and Ukrainian), being unknown elsewhere in the Slavic world. It is an honored name in our mushroom vocabulary, though rather for its role in folklore and proverbs, where the *gruzd'* is the captain of the mushroom host,¹ than as a table delicacy.

i. There is the famous proverb: *Nazvahja gruzdjom, polezaj v kuzov*; which is to say, "If you call yourself a *gruzd'*, into the basket you go!"; in other words, "If you give yourself airs, take the consequences."

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With the *ryzhik* and the *gruzd'* we leave behind the whole tribe of gilled mushrooms and ascend the scale of values to the best varieties of the numerous genera of boleti. These are the mushrooms that, instead of radial gills on the underside of the cap, display sponge-like pores. Two of them that are esteemed by all Russians are the *berjozovik* (or *podberjozovik*) and the *podosinovik*, and concerning them there is a singular fact to be disclosed.

In recent times the mycologists of the West have discovered that an intimate tie of mutual help links certain mushrooms to certain kinds of trees, each of such mushroom species being thus related to one or more kinds of trees. These mushrooms may assume a slightly different appearance according to the kind of tree the individual specimen lives with. For this relationship to be understood, one must keep in mind that the mushrooms we see in woods and fields are merely the fruit thrown to the surface when all conditions are right: the life of these elementary organisms goes on chiefly underground; indeed, in the case of truffles, entirely so. Just as the therapeutic potency of certain moulds has been discovered only in this century, so the importance of mushrooms in life's great round begins now to be discerned. We know that the rootlets of many trees are often locked in symbiotic embrace with the subterranean 'mycelium' of the mushroom, and for this intimacy the mycologists have invented their special word - 'mycorrhiza', from the Greek words for fungus and root.

The painstaking observations of mycologists have proved that between the birch tree and the boletus scaber there is such a relationship, and similarly between the aspen and the European boletus rufus. Now it is an arresting fact, of which mycologists in the West are usually unaware, that the folk names in Russian for these very species of mushrooms are keyed to those same trees: the *berjozovik* lives with the *berjoza*, or birch tree; and the *podosinovik* grows under the *osina*, or aspen. The *berjozovik* is the boletus scaber, and the *podosinovik* is the boletus rufus. The scientists now confirm what the peasants of Eastern Europe have sensed from time immemorial. The *berjozovik*, incidentally, is abundant in America, but in my opinion the true *podosinovik* does not occur here, and those that are gathered and eaten as such by Russians in the United States belong to other species somewhat resembling the red-capped aspen-mushroom of Europe. There is also in Russia a rare blue-capped *podosinovik*, whose scientific name I do not know: it would be interesting to identify it, to see whether the mycologists have yet confirmed its link with the aspen tree.

Ranking above all the mushrooms so far mentioned come those aristocrats of the mushroom world, the *belye griby* or 'white mushrooms', known to the French as the *cepes de Bordeaux* and to the mycologist as the boletus edulis.

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These are the most famous of common mushrooms, the delight of epicures, the 'cep' of English gourmets. The Russians call them 'white', not primarily because their flesh is white, but because in the Russian language 'white' connotes excellence.

And right here we come upon another of the strange parallels in fungal imagery that recur between peoples geographically and culturally remote from one another. We have seen that both the Russians and Catalans speak of certain lactarii as the 'rusty ones'. Now we observe that the Basques of Guipuzcoa, Upper Navarre, and the Labourd refer to the dun-colored cep as the 'white mushroom', just as the Russians do, the Basque term being *ondo zuri*. We have said that 'white' connotes excellence, but perhaps this is an understatement. There is an abundance of evidence that the primitive peoples of the Eurasian land mass, no matter how different culturally, were prone to associate whiteness and brightness with divinity, with the 'White Goddess' (as Robert Graves calls this creature), who possessed myriad shapes and names. Is it possible that in the 'white mushroom' of the Russians and Basques we discover a survival of a primitive divine kinship>

Truly senatorial in girth and mass, the splendid white mushroom or cep is supreme in fragrance and taste. It lends itself to pickling and drying, so that it keeps indefinitely and then may be served in soups and sauces. This is the mushroom that Russians used to eat in Lent in lieu of meat: little wonder that no one shrank from Lenten fare!¹ This is the mushroom, packaged in cellophane envelopes, that is to be found on sale in the little Jewish food shops of New York. (How lovable are those shops, in the immense variety of their stores and the warmth of the welcome that the owners, hailing as they almost always do from Eastern Europe, extend to appreciative customers, and especially to Russians!) During the recent war with Germany, the importation of these mushrooms was interrupted, but new sources sprang up in Chile. The quality, however, was not the same, and with the return of peace, the flow of mushrooms from Poland and Italy was resumed. In New York there is one firm, the Reliable Mushroom Company in Rivington Street, that confines its business to dealing in these imported dried mushrooms. In November 1948 I priced the various grades that Mr. Fessel was offering: the shredded Chilean mushrooms were \$2.75 a pound and the Italian were \$4.00; but the long and handsome strings of dried Polish ceps were \$6.00. In December 1950 the Polish product had risen to \$8.00, and for caps alone (the stems being considered inferior and removed)

I. These mushrooms were allowed by the Russian Church during all fasting periods save Holy Week - a subtle line of demarcation in religious discipline that will delight all amateurs of ethno-mycology.

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the price was \$12, but a year later, in October 1951, the market for these caps had fallen to \$8.

In New York the cep is for sale only in its desiccated state, though it grows throughout the wooded countryside; and those who know it only dried will never divine the delicacy and richness of its taste when pickled in brine, or marinated, or preserved by boiling and sealing in jars, or better far, when fried fresh in butter, or, finally and best of all, sauteed in sour cream.

I respectfully suggest to the Wine and Food Society that some day they arrange to serve to their members, artfully prepared, a selection of all the mushrooms I have mentioned, accompanied of course by appropriate wines, and I predict that by a vote resembling a Soviet election the choice will run to the incomparable *belye griby*. I am not unmindful of the difficulties in arranging such an extraordinary culinary event. All the mushrooms must be served fresh, to do them all equal justice. A generous mess of the most ephemeral - the *opjonki* - would have to be rushed in at the last moment from close by, of course with motorcycle escort, sirens whining. A chef would be cooking them in a chafing dish en route. Other kinds of mushrooms would hail from Europe by plane. The chef in charge would thoroughly understand the personality of each of the kinds, and possess the skill to evoke its proper character. Nobly served, what a memorable spread we should have, and what a tribute to the folk-cookery of the Slavs!

I have one more name to add to the honor roll of the Russian mushroom world. If the *belye griby* are the aristocrats of that world, then the serene dignity of Prince must be bestowed on the *borovik*. By ancient tradition and common consent, it leads the roster. The Czechs, who vie with us in our enthusiasm for it, call it the Regal Mushroom, or *hřib krdlovsky*. Some Frenchmen know it too. They use for it various names - *tete de negre*, *cepe polonais*, *gendarme noir*, and *cepe bronze*. The name that the mycologists use is *boletus asreus*. Apparently it does not occur in the New World.¹ It is rare in Russia, so rare that many Russians apply the famous name erroneously to its close relative, the *belyi grib*. Perhaps it is not a distinct species, but only a variant of the other, a variant linked symbiotically with some kind of pine tree, for *bor* means pine-forest. The *borovik* owes its supreme rating with us to its rarity and to its breathtaking beauty: its 'head' (for one refrains from speaking of the 'cap' of such a majestic creature) is a deep brown approaching black, and in size and weight and

I. A European mycologist has reported finding the *borovik* in Florida. See 'The Boletoidae of Florida', by Rolf Singer, in *The American Midland Naturalist*, January 1947, pp. 22-24. Until others confirm his findings, I hesitate to accept them.

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stature it is the equal of the *belyi grib*. In fragrance and taste, perhaps only the most knowing epicures can distinguish the two, but however closely related the two kinds may be, and however much they look alike, to the *borovik* belongs the dignity of first place in the whole mushroom world.

The Russians never discuss the weather to make conversation, and our lack of interest in golf scores and sporting events generally, both amateur and professional, is complete. But mushrooms are different. They are not only raw material for the kitchen, they are a theme for endless discussion. They are ever present in our minds, even when we are not discussing them. They are so taken for granted that Russian authors seldom stop to discuss them systematically. But references to them are scattered everywhere in Russian literature - in poetry, fiction, essays. Three times in *Anna Karenina* does Leo Tolstoy bring them into his narrative, and the episodes, for the perceptive reader, are extraordinarily revealing. In one, a nursery full of tearful little children is turned in an instant from tears to joyous excitement with the announcement that they are to go mushrooming. The second episode, for our purpose, is even more startling. A land-owner is preparing to propose to a girl he loves, and with this intention goes into the woods to join her where she is gathering mushrooms. But he never gets to the point of proposing, for they begin by discussing mushrooms, and though both are longing to speak of love, once they are on mushrooms, like a cracked record they cannot get off that subject! In Appendix I we offer to our readers a rendering of these two passages from *Anna Karenina*. The third episode, though slight, is perhaps the most touching. The land-owner Levin goes out into his fields, where his peasants are mowing the hay, to join them in their labor. The day is hot and long and the work is hard, but they all press on to finish a big stint. As twilight comes they find themselves cutting grass among the trees of a wood where birch-mushrooms abound, big fellows that have fattened on the moist humus of the grassy places. In their rhythmic sweep the scythes cut the mushrooms as well as the grass. Levin, exhausted though he is by his unwonted effort, nevertheless notices that the oldest of the peasants, a grand old man who excels all the others in grace and endurance, never fails to lean over and pick up the mushroom that his blade has severed, then tucking it away in the fold of his blouse. "Another present for my old woman," he says. His scythe does not miss a single blade of grass, nor does a single mushroom escape him.

There are delightful verses about mushrooms in the poems of two of Russia's more accomplished poets, Lev Alexandrovich Mej and Viktor Vladimirovich

PLATE III Jean-Henri Fabre.

Clathrus cancellatus Lin. ex Tournef.



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Khlebnikov. I like particularly Khlebnikov's apostrophe to the mushrooms of the forest. The poetic virtue of his lines is lost in this literal translation:

Here are *syroezhki* and the russet *ryzhik*
With raspberry blood,
Yellow *gruzd'*, round and shaggy,
And you, *pecheritza*,
Simple and white like snow,
And the firm white ones with the thick caps.

The 'firm white ones' are ceps of course, the thick-capped *belye griby*. Of special interest is Khlebnikov's description of the *ryzhik* as 'raspberry-blooded'. All the lexicons say that the *ryzhik* is the *lactarius deliciosus*, a mediocre mushroom that exudes saffron drops. It is clear that the *ryzhik* of Khlebnikov is a variant, a *lactarius* that drips raspberry blood - *malinovaja krov'*.

Yet another Russian author, Sergej Timofeevich Aksakov, late in his life wrote about mushrooms in a lovely essay that is little known. It merits attention for several reasons, and in Appendix II we present what we believe is the first translation of it.

The addiction to mushroom gathering is not a badge of politics or ideology. There was Aksakov, a superb figure of Old Russia. But there was also Lenin, whose fanaticism brought endless woe on Russia and the world, but whose dedication to wild mushroom hunting during one brief spell shows him in a more winning light. His wife Nadezhda Krupskaja wrote in a letter in 1916 that he pretended to know nothing about wild mushrooms and to care less, but in fact he was seized at that time with a veritable passion for mushroom gathering. (He was possessed of a *razh'*, as she put it.) One day in that fateful summer of 1916 they were hurrying along a mountain trail near Zurich to catch their train. A drizzle soon turned into a downpour. Suddenly among the trees Lenin caught sight of ceps. At once he turned aside after them, paying no attention to the wet. "We were drenched to the very marrow of our bones and of course missed our train." He did not quit until his sack was full and his *razh'* was quenched.¹

By the Russian scale of values, all the wonderful golf courses of vast America are inviting more for the mushrooms that grow on them and in the woods along their well-tended borders, than for the game. You can always tell a Russian when you see her in her wooded country: she progresses slowly, stooping

i. This curious episode is told by N. Valentinov in his *Meetings with Lenin (Vstrechi s Leninym)*, Chekhov Publishing Co., N. Y., 1953, p. 211.

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and peering to right and left, with a low, circular, sweeping glance, as though she has lost something. She is armed with a hamper and a walking stick to poke here and there; and she springs forward occasionally with a happy pounce and kneels to gather in the prize.

When the Russian child learns his alphabet, he sees by a picture that 'g' stands for *grib*; this has been habitual at least since the zyth century. In his primer he reads of mushrooms. In his school he is like to find a playmate whose family name is taken from some mushroom, a boy named Gribov, for example, or a Gribunin, or a Borovikov, or a Gruzdjov, or aRyzhikov, or an Opjonkin, or a Syroezhkovskij, or a Lisichkin. The Maslenikovs are common, but that name might also be derived from the trade of the butter-churner. I am told that in Russia there are even Mukhomorovs, but I myself have never run into this equivocal name. In the time of Catherine the Great there was a famous painter named Borovikovskij, and a generation later the leading playwright was Griboyedov, 'Mr. Mushroomeater'. Was there ever such a name in English, or a Mycophagenes in ancient Greece? In English the only parallel that I recall is the fine old medieval family name of Norman origin, still current I believe, of Muschampe, named after some field or meadow famous for its *mousserons* or mushrooms. At the imperial University of St. Petersburg there used to be a professor of law named Gribovskij who would sign his articles with the pseudonym 'Muketov', thus giving a Greek twist to his Russian name.

Before long the Russian youngster learns by heart the stanzas of the childish mushroom marching poem, 'Panic among the Mushrooms'¹, wherein Colonel *Borovik*, Commander-in-Chief of the mushroom host, summons his minions to war. The red-coated *mukhomory* decline to serve, for they are senators. The *beljanki* say no, for they are aristocratic ladies and exempt. The *opjonki* refuse, since they must do duty as ladies-in-waiting. The morels beg off, for they are gray-headed oldsters. The *maslyata* say they are needed in the factories, the ink-caps point to their spindly legs, the *volnushki* call themselves old dowagers, and the *lisichki* profess to be nuns. The *ryzliiki* are just simple peasant folk and useless as soldiers, and the *volui* duck their duty by reminding the Colonel that they are nothing but the village loafers. Then up step the valiant *gruzdi*, willing fellows, who will gladly go to war and smite the enemy. And so, with a loud 'Oo-rah! oo-rah! oo-rah!', off they march. These stanzas with their shrewd comments on the diverse species are the didactic and mnemonic device by which a people's rich mushroom lore is passed on to the next generation.

I. The Russian name is *Perepolokh sredi gribov*. It exists in many variants and can be found in many Russian anthologies.

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Based I think on them, I recall a children's ballet and chorale impersonating the mushroom population; was it not composed by Cesar Cui, or perhaps Rebikov ? The Czech composer Leos Janacek near the end of his opera, *Li ska Bystrouska*, 'The Cunning Fox', has the Forester sing a lovely aria to the mushrooms as he goes through the woods.

No people talk and write more, or more enthusiastically, about good food than the Russians, and soon or late their conversation turns to mushrooms. Has the season been good ? Who has found the biggest lot of the best kinds ? What about the best ways of preserving and cooking > In the Russian language the common term for a warm, soft rain in summer is 'mushroom-rain' -*gribnoi dozhd'* - used even when mushrooms are not under discussion. Among the country-folk, by immemorial right, the peasant who discovers a spot where morels or 'white mushrooms' abound, enjoys thereafter a first claim on the crop in that area. City folk who summer in the country eye one another furtively on their mushroom sorties, like rival spies intent on each other's secrets, and those who hit on good colonies often guard their secret jealously. The Czechs are also notable fanciers of mushrooms, vying in their enthusiasm with the Russians, and the Poles do not lag far behind. The outstanding Polish poet, Adam Mickiewicz, in the third book of his masterpiece, *Pan Tadeusz*, devotes some lines of unforgettable beauty to the gathering of wild mushrooms. But as a Russian I remark that he pays obeisance only to the *Hsichki*, the *boroviki*, and the *ryzhiki*. Of the others he goes on to say that the people despise them. Not thus does a Russian speak. Another Pole, Stanislaw Trembecki, a conspicuous literary figure in the Polish classicist period in the late 18th century, penned an astonishing diatribe against mushroom-eaters. He was a learned crank, to be sure, but belligerency on this theme has no parallel among Russians, not even Russian cranks.¹ Of course it is wrong to generalize from the utterances of intellectuals, and the peasants of Poland may well be free from the mycophobia that has infected Polish men of letters, but we are constrained to point out that as early as the 17th century that eminent Polish poet, a master of the baroque school, Wacław Potocki, in 'The Unweeded Garden' discusses wild mushrooms at some length, and the tenor of what he says is that mushrooms are an esoteric business, best left to the few who know the secrets!

Close to forty years have passed since I last gathered mushrooms in Russia,

I. The attack on mycophagists appeared posthumously in an article entitled *Pokarmy* [Food], edited from the writer's autograph by Franciszek Grzymala and published in *Astrea*, *Pamiętnik Narodowy Polski*, Warsaw, 1822, Vol. n, pp. 136-152. It was republished in *Pisma wszystkie*, edited by Jan Kott, Warsaw, Państwowy Instytut Wydawniczy, 1953, Vol. n, pp. 206-7.

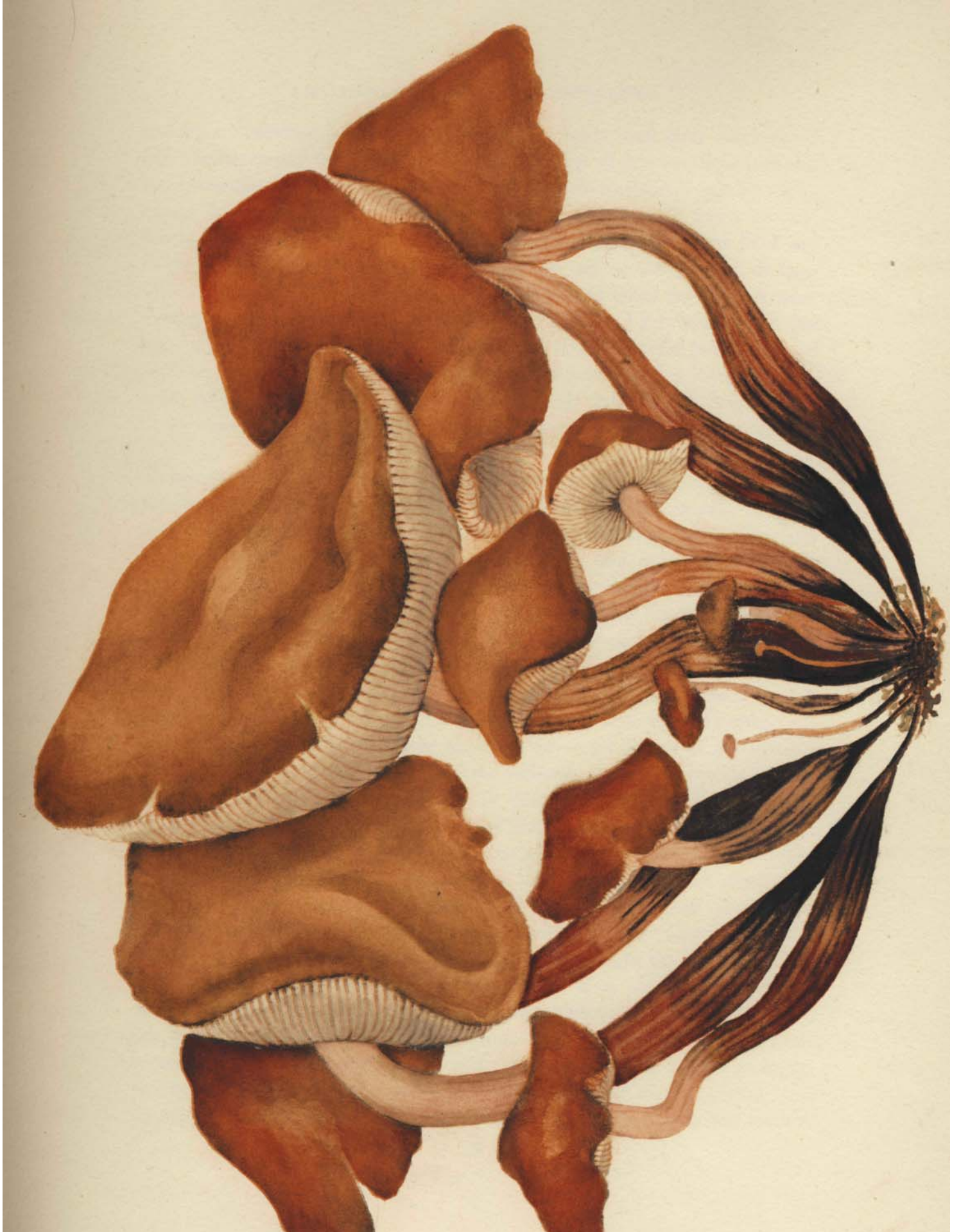
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and reveled in the mushroom lore that we all shared. As I re-read the lines I have written, I become aware of receding planes of memory, on the periphery of my consciousness, strewn with visions of mushrooms that I can no longer identify by name, and with names of mushrooms that are no longer attached to clearly defined images. What were those *beljanki* that refused to go to war because they were aristocratic ladies? The *volui* of the poem - *vol* means 'ox', and these are therefore 'bovine-mushrooms' - were, I remember, a lowly species, unwholesome until cooked, and utilized only in the absence of anything better. Then there were the *volnushki*, which might mean the 'wavy ones', but are more likely another 'bovine' species; the *sinjushki* or blue-capped ones; the *svinushki* or swine-mushrooms; the *bolotovik* or swamp-mushroom; the *dubovik* or oak-mushroom; and the *elovik* or balsam-mushroom. There was the *mokhovnik* or moss-mushroom. There was a big, ugly mushroom that grew in isolation and was never gathered: the *kozjol* or goat. The puff ball was the Devil's pepper-pot - *chortova perechnitza*. There was *thegolubetz* or pigeon mushroom, and the *obabka*, of which only the name floats uncertainly to me. From earliest childhood I recall another curious name - the *skripitza*, or screeching mushroom: what could it have been? Gogol's immortal character in *Old World Squires*, Pul'kheria Ivanovna, once started to tell how to preserve in vinegar a mushroom that she called the *travjanka*. She had just reached the point where she had lined her keg with oak leaves and saltpeter and added some blossoms of the bird-cherry tree, the Russian *cherjomukha*, which the botanists call the *padus avium*, when she was diverted. (What can the world do about mischievous Persons from Porlock?) Never shall we know the rest of that enticing recipe, but someone at least can identify for us the *travjanka*.

One of the loveliest mushroom stories is the legend about their origin that we find in Bohemia, which we retell from the recension recorded by the Czech folklorist, Mrs. Bozena Nemcova.¹ It seems that Jesus and Peter were passing through a Czech village and heard the sound of wedding music in a humble cottage. They joined the party, but not before Jesus had warned Peter to accept no food save only bread and salt, for the people were poor. Jesus and Peter were made most welcome. They partook of the bread and salt that were offered to them, declining however the cakes [*koldce*]. But a little later, when no one was looking, Peter slipped some cakes into his pouch. After a while Jesus and Peter continued on their way, Jesus immersed in his thoughts and Peter lagging behind, that he might nibble on his cakes. But at each bite, Jesus would wheel around and ask him what he was eating. Peter would spit out the mouthful

i. *Ndrodni bdchorky a povesti*, Prague, 1880, vol. n, pp. 302-4.

PLATE IV Jean-Henri
Fabre. *Collybia fusipes* Fr. ex Bull.



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and reply, "Nothing." This happened again and again, until there was no cake left. Then Jesus said to Peter, "Go back, and pick up all that you have spat out, and I will wait for you." When Peter returned he said to Jesus, "I found nothing except this that I show you. I thought it was food, but lo! it was a growth, rooted in the soil." Jesus said, "It is a growth, and it grew from the food you threw away." Then Peter asked for forgiveness, and it was granted to him. Then they went to the cottage of a poor woman and asked her to cook what Peter had found, and it turned out to be mushrooms, and they were good. Because the mushrooms had sprung from the food of poor people, Jesus bestowed them on the poor, and he taught the poor woman where to seek them. And because poor people need help, mushrooms multiply and abound. And because Peter, eating them, nevertheless remained hungry, mushrooms are not filling.

When we consider how gingerly even mycologists in America oftentimes handle the run of miscellaneous mushrooms gathered in fields and woods, the self-assurance of Russians as they by-pass the poisonous and foul-tasting ones, and grade the others according to their edible merits, and consume these wild mushrooms with impunity as an important ingredient in their daily diet, seems astonishing to other peoples. Here is a notable instance where folk-wisdom anticipates and overreaches the savants. I have surely strained the patience of my readers with the Russian vocabulary that I have recalled for the mushroom tribe, but there must be an endless glossary of other names that I have forgotten or never known. The wealth of the Russian nomenclature for the mushrooms is a measure of the role they have played in the social history of the Russian people. The names evoke for Russians the edible qualities of the various kinds, but semantically they refer primarily to the habitat and essential character of the species. Several of the folk-names for mushrooms in the Russian language could have come into acceptance only after age-long intimacy. The scientific nomenclature of the Western mycologists, devised over the past century, is superficial by comparison with some of the Russian common names, the pseudo-classical terms of the scientists being keyed often to accidental attributes, the aspects that the untutored eye of the early mycologist first remarked.

In the English language the very word 'fungi' is an ugly, half-assimilated alien, detached and cold in its emotional personality; and apart from it there are in the common speech only 'mushroom' for the species that lends itself to cultivation and 'toadstool' of evil aura. 'Toadstool' has no precise meaning, but in ordinary usage it embraces all the wild mushrooms that the person born in the English-speaking world does not know and therefore fears and loathes.

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It is a word that most of those who love mushrooms refrain from using. Even if viewed as a fanciful term, it is inept, surviving only through the inadvertence of a great people whose attention has been elsewhere. With this single word 'toadstool', soaked in condescension and repugnance, the English-speaking world lumps together and dismisses without a second glance some of the richest and most varied embroidery doing honor to wild nature's glorious vesture.

II

MUSHROOMS AND THE ENGLISH

Beware of musherons, moch purslane, gourdes, and
al other thinges, whiche wyll sone putrifie.

SIR THOMAS ELYOT in *'The Castd of Helth'*,
1541, folio 93.

THERE is no doubt about it: from, earliest times the English have had little use for mushrooms. The *Crete Herball* of 1526, a translation from the French, voiced the hostility of both peoples:

Fungi ben mussherons. . . There be two maners of them; one maner is deedly and sleeth them that eateth of them and be called tode stooles, and the other dooth not. They that be not deedly haue a grosse gleymy [slimy] moysture that is dysobedyent to nature and dygestyon, and be peryllous and dredfull to eate & therefore it is good to eschew them.

In the 16th century scientific thought had hardly begun to shake itself loose from folk-beliefs of unfathomed antiquity, and compilations such as *The Crete Herball* are a treasury of such beliefs. The printing press, fresh on the scene, captured and preserved for us the common content of men's minds at that moment in history when the Western World was beginning its slide into the modern era of big changes. And in the case of mushrooms, let us here salute a singular example of the tenacity with which even a great people sometimes clings to its primitive notions. For that naive division of the mushrooms between the 'two maners of them', the one deadly and the other not, and even these latter to be avoided - that elemental antipathy, captured for us in the text of the first comprehensive English herbal, has carried on with undiminished vigor through four centuries more, down to the present day. Learned mycologists write treatises and preach an enlightened gospel, but what do all their knowledge and all their cautious advice weigh? Small cliques of amateurs exist, but the public is not stirred. In a recent elaborate American work on mushrooms the author¹ brings himself to write a chapter on 'mycophagy', but confesses that he himself almost never lets mushrooms enter his mouth! Not thus does one inspire appetite in others. The repugnance for 'toadstools'

I. Alexander H. Smith in his *Mushrooms in their Natural Habitats* (Sawyer's Inc., Portland, Oregon, 1949) says as he engages in a lengthy discussion of mycophagy, pp. 121-2: "It is impossible for me to discuss the edibility of even the highly recommended species authoritatively from my own experience since I seldom eat them myself".

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is sometimes an aggressive thing. I have seen the English governess, her charges in tow, advance on the enemy (a lovely and innocent russula, as it happened), kick it over, and with shudder and grimace crush it with the heel of her big, low-heeled shoe; turning then to the children, she shepherded them away from the unclean thing. Thus by an unspoken lesson this creature unwittingly seared their young minds with the branding iron of an ancient curse. Where she and her tribe see, in the words of the herbalist, a slimy toadstool, a Russian beholds 'the fat of the earth'.

As the 16th century drew to a close, in 1597, John Gerarde brought out his famous *Herball or General! Historie of Plantes*, an immense and delightful book. What he says of mushrooms may differ little in substance from *The Crete Herball*, but his opulent manner of expressing the same thing deserves the accolade of the reader's attention. The Englishman is venturesome in most things save food, and never before Gerarde nor since has that peculiar dietary conservatism of the race received more elegant and curious endorsement:

Many wantons that dwell neere the sea, and haue fish at will, are for change of diet to feede vpon the birds of the mountaines; and such as dwell vpon the hils or champion grounds, do long after sea-fish; many that haue plenty of both, doe hunger after the earthie excrescences, called mushrums; whereof some are very venemous and full of poison; others not so noisome; and neither of them very wholesome meate . . .

Master Gerarde then proceeds to describe one kind that is not bad and straight-way a dozen that he condemns, saying about a certain species that grows in "mossie and shadowie woods" that he does "the more briefly passe them ouer, not purposing to vse many words about such fruitlesse matters". Finally he comes to his sweeping and memorable conclusions:

Galen ammeth that they are all very colde and moist, and therefore do approuch vnto a venemous and murdering facultie; and ingender a clammie, pituitous, and colde nutriment if they be eaten.

To conclude, fewe of them are good to be eaten; and most of them do suffocate and strangle the eater. Therefore I giue my simple aduice vnto those that loue such a strange and newefangled meates, to beware of licking honie among thornes, least the sweetenes of the one do not countervaile the sharpnes and pricking of the other.

[pp. 1384-6 of first edition]

A few years after Gerarde, in 1609, Sir Michael Scott said his say about mushrooms in *The Philosophers banquet*, and here and now we give to his words new wings:

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. . . Sow-beard¹ or Mushrome, according to Rasis [the Arabian physician] is cold and grosse, and being taken raw ingenders flegme, and the chollike, and windinesse in the guts; neither is it to be eaten but with hot sauce or meate, but the red are not to be eaten at all. The Todestoole is much worse then the Mushrome: for it hath choaked and killed many that haue taken it, and the best that it doth, is to breed flegme in the body in abundance . . . [Verso of folio 36, wrongly numbered 33]

These famous herbalists whom I have quoted were leaning on the authority of Dioscorides, Galen, and Rhazes, but they elaborated richly on their sources, going far beyond the Greek and Arabic writers in maligning the mushroom tribe, and invoking the oracles only to clothe with their authority the loathing of the English, which they undertook to express in their full-bodied prose.

Half a century after Gerarde it was still possible for a well-born and educated Englishman to reach man's estate without having heard of truffles. John Evelyn at the age of 24 made their acquaintance in France. On September 28, 1644, he found himself in Vienne, a day's journey by river from Lyons, and there, as he says in his diary, he "supped and lay, having amongst other dainties, a dish of truffles, which is a certain earth-nut, found out by a hog trained to it, and for which those animals are sold at a great price. *It is in truth an incomparable meat.*" (The emphasis is mine.)

The Englishman in Evelyn was being diluted by travel. His hospitality to strange and newfangled meats found no echo in his countryman Jeremy Taylor, who in 1650-1, in his *Holy Living and Dying*, strikes the less liberal note:

Fly from all occasions, temptations, loosenesses of company, balls and revellings, indecent mixtures of wanton dancings, idle talk, private society with strange women, starings upon a beauteous face, the company of women that are singers, amorous gestures, garish and wanton dresses, feasts and liberty, banquets and perfumes, wine and strong drinks, which are made to persecute chastity; some of these being the very prologues to lust, and the most innocent of them being like condited [seasoned] and pickled mushrooms, which, if carefully corrected and seldom tasted, may be harmless, but can never do good. [Chap. 2, 'On Christian Sobriety', Sec. in, 'Remedies against Uncleaness']

It was Jeremy Taylor's privilege to believe in the mortification of the flesh, but why did he vent his spleen on the humble mushroom? I hope to show on a later page that he and the herbalists were voicing, unbeknownst to themselves, a pre-Christian tabu shared by all the peoples who dwell on the shores

1. Sow-beard = sow-bread; unreported in the Oxford Dictionary in this sense of mushrooms, but familiar as a name for the cyclamen. In Latin *tuber* meant both 'truffle' and 'cyclamen', and in Giuseppe Baretto's Italian-English dictionary, 1832, *tartufo* is translated by 'sow-bread, a kind of mushroom growing underground'. The addiction of pigs, especially sows, to underground fungi justified the use of this name for truffles.

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of the North Sea. The passage about the condited and pickled mushrooms follows hard on another that perhaps my readers will thank me for recalling. The stern author is listing his remedies against 'uncleanness', and here is what he recommends about food in general:

A spare diet, and a thin coarse table, seldom refreshment, frequent fasts, not violent, and interrupted with returns to ordinary feeding, but constantly little, unpleasant, of wholesome but sparing nourishment: for by such cutting off the provisions of victual, we shall weaken the strengths of our enemy.

Is it uncharitable to venture the opinion that this exhortation to consume unpleasant food, from Jeremy Taylor's day even unto now, has been more honour'd by his countrymen in the observance than the breach?

Apparently the Stuarts on recovering the throne of England brought back with them from across the Channel an appetite for the mushroom world. How else shall we explain that before the end of the century the Englishman was commonly referring to the good earthy 'trubs' ? A little later both truffles and morels began to figure in the cookbooks. For example, Patrick Lamb, who was for "near fifty years" master-cook to Charles II, James II, William and Mary, and Queen Anne, in his *Royal Cookery or the Compleat Court-Cook* (London, 1726) includes in his menus mushrooms (which he fails to identify), morels, and truffles. In the extracts filling five volumes that have been published of Parson James Woodforde's prodigious diary, he refers repeatedly to pickled mushrooms, to truffles, to morels. Toward the end of the 18th century they had become a regular feature of this country clergyman's fare, brought to his door by the folk who had gathered them. Gilbert White in his *Observations on Vegetables* reports that a truffle-hunter had called on him "having in his pocket several large truffles" found in the neighborhood of Selborne; the man was offering them to him at half a crown a pound. White speaks casually of the dogs that the truffle-hunter was using to smell out the truffles. It is clear that truffle hunting was no novelty for him. One might have expected to find the gentlemen of England in that urbane century relishing the table delicacies familiar to the French and Italians; and since they were also steeped in the classics, they must have known of the addiction of the epicures of ancient Rome to mushrooms. But it is startling now to discover from the casual observations of two rural clergymen that the English rustics in their time were gathering morels and truffles for the market. In the whole of the English-speaking world today, does there survive a single truffle-hunter e (Truffles grow in America also, but few pay attention to them, rarely even

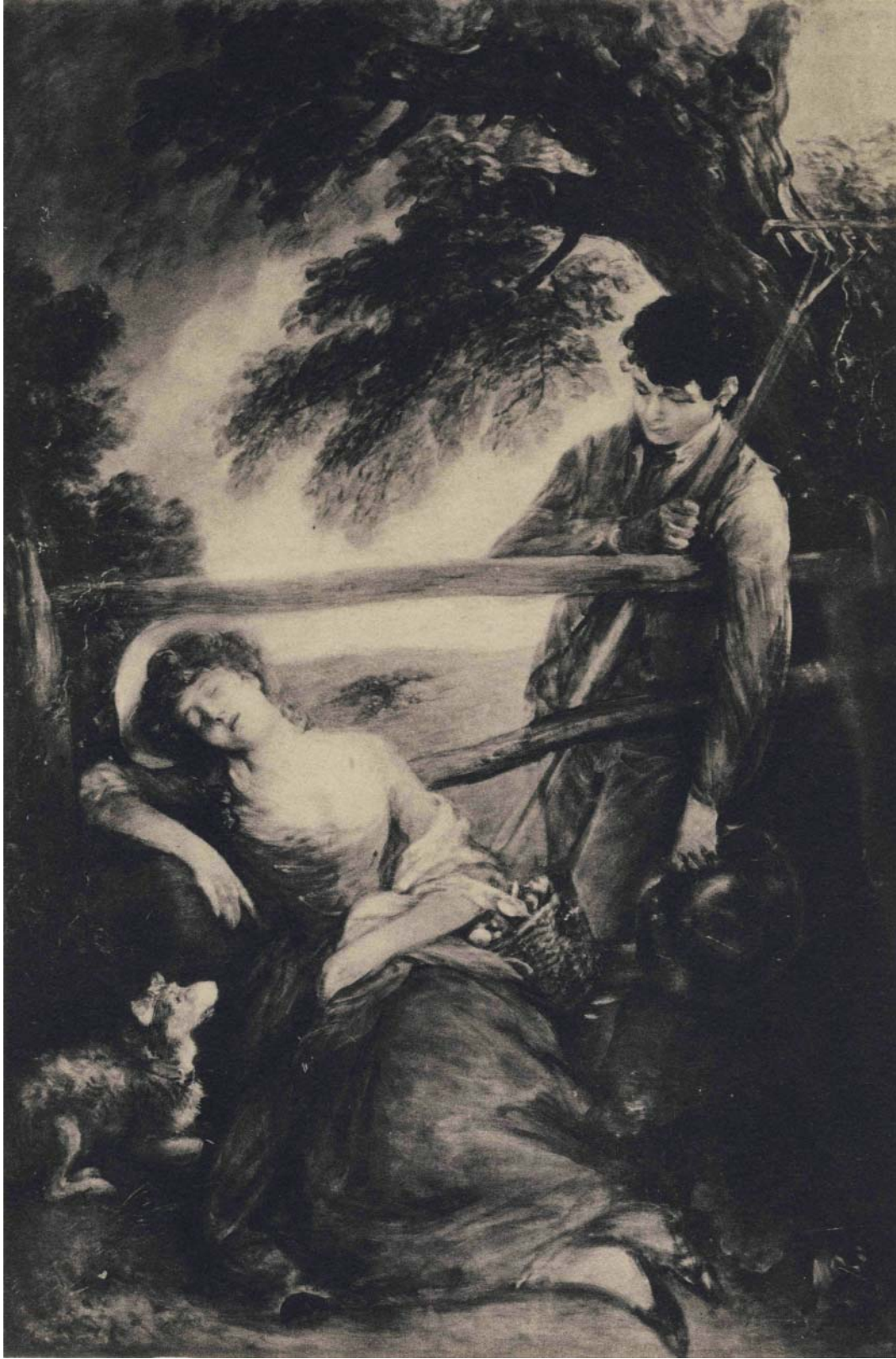


PLATE V. Thomas Gainsborough. *The Mushroom Girl*. *Boston (Mass.)*, *Museum of Fine Arts*.

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the mycologists. They are one of the New World's still untapped resources.) That strange false dawn of mycophagy which marked England's 18th century even attained expression in art when Thomas Gainsborough painted his *Mushroom Girl*, a sample of bucolic sentimentality typical of its time and milieu. Is not this the only occasion in the history of English art when a painter of the first rank has acknowledged the existence of the fungal world? And in this case the basket filled with field mushrooms is only a detail in the composition, an excuse for a title. There exists in a private collection a second work by Gainsborough with the same title, a wholly different composition, showing a child, close up, as she reaches out for mushrooms growing in a field.

Having once taken hold, why did this Arcadian pursuit, so noble in its simplicity, die out? Morels and truffles added variety to the Englishman's fare, but they were destined to vanish from his table in the course of the strange decay that overcame the English cuisine in the glorious Victorian era. In 1847 the mycologist Badham was saying of mushrooms that "England is the only country in Europe where this important and savoury food is, from ignorance or prejudice, left to perish ungathered."¹ Half a century later, in 1891, another mycologist who bore the arresting name of Mordecai Cubitt Cooke, in a delightful treatise on the edible fungi pointed out that "in the time of our grandfathers it was almost universally believed that our islands produced but one kind of fungus which was edible."² His words implied a growth in enlightenment in his own lifetime that few other observers have detected either then or since his day. Apart from occasional remarks in the writings of mycologists, the English have paid little attention to their blindspot concerning mushrooms. So far as I know, even among the mycologists only one has done justice to the subject, inveighing against his countrymen's prejudice - William Delisle Hay, who published *An Elementary Text-book of British Fungi* in London in 1887. His voice crying in the solitudes deserves to be recalled. Speaking of the fungi near the beginning of his book, he says:

Among this vast family of plants. . . there is but one kind that Englishmen condescend to regard with favour. All the rest are lumped together in one sweeping condemnation. They are looked upon as vegetable vermin, only made to be destroyed. No eye can see their beauties; their office is unknown; their varieties are not regarded; they are hardly allowed a place among nature's lawful children, but are considered something abnormal, worthless, and inexplicable. By precept and example children are taught from earliest infancy to despise, loathe, and avoid all kinds of 'toadstools'. The individual who

1. *A Treatise on the Esculent Funguses of England*, p. vii.

2. *British Edible Fungi*, p. 17.

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desires to engage in the study of them must boldly face a good deal of scorn. He is laughed at for his strange taste among the better classes, and is actually regarded as a sort of idiot among the lower orders. No fad or hobby is esteemed so contemptible as that of 'fungus-hunter' or 'toadstool-eater'.

This popular sentiment, which we may coin the word 'fungophobia' to express, is very curious. If it were human - that is, universal - one would be inclined to set it down as an instinct, and to reverence it accordingly. But it is not human - it is merely British. It is so deep and intense a prejudice that it amounts to a national superstition. Fungophobia is merely a form of ignorance, of course; but its power over the British mind is so immense, that the mycologist, anxious to impart the knowledge he has gleaned to others, often meets with scarcely credence or respect. The superstition strikes deep. He who would write or lecture about Fungi can scarce find readers or hearers. The English scientist investigates every domain of nature, but leaves this one coldly alone. The English medical man disdains to inquire into the chemical constitution of Fungi, and is indifferent to and unknowing of their relations in regard to medicine, toxicology, diet, or hygiene. It is surely high time that English intelligence should rise superior to this peculiar phase of ignorance. . . .

It is a striking instance of the confused popular notions of Fungi in England, that hardly any species have or ever had colloquial English names. They are all 'toadstools', and therefore are thought unworthy of individual baptism. Can anything more fully demonstrate the existence of that deep-rooted prejudice called here 'fungophobia'; . . . In the countries of the Continent the greater number of species have each their particular local names. Even the Redskin of America and the Maori of New Zealand have specific names for their common Fungi. Only we prejudiced Britons have none.

More than six decades have passed since the above lines were penned, and though the English-speaking world has produced numbers of good mycologists since then, the substance of the indictment is as true today as when William Delisle Hay raised his voice in protest.

Hay could have cited Charles Darwin to illustrate his point. This observant and knowledgeable scientist, in that supreme book of travel, his diary of the voyage of H. M. S. BEAGLE, remarked in the entry for June i, 1834, that the natives of Tierra del Fuego relied on a certain arboreal fungus (a species of the genus *cyttaria*) for an important part of their diet; and then, almost as though to supply me with a singularly happy illustration for my argument, our learned young man showed the limitations of his learning. "At the present time," said Charles Darwin in 1834, "I think Tierra del Fuego is the only country in the world where a cryptogamic plant [i.e., a fungus] affords a staple article of food." The young Charles Darwin knew more about the Fuegians than about the northern Slavs and Catalans.

As to mycophagy, Darwin revealed a strange lapse in knowledge that amount-

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ed to a failure of perception. In him the mycophobia of the English was a mild affliction, a recessive trait. Sometimes this racial infirmity erupts with terrifying ferocity. Let the reader consider the following quotation from Mrs. Gwen Raverat's *Period Piece*, a book of Victorian reminiscences published in 1953. Here we learn what mushroom gathering a l'anglaise can sometimes mean, to what mad purpose the gentle art of mushroom knowing may be perverted:

In our native woods there grows a kind of toadstool, called in the vernacular THE STINKHORN, though in Latin it bears a grosser name [the phallus impudicus, of course]. The name is justified, for the fungus can be hunted by the scent alone; and this was Aunt Etty's great invention: armed with a basket, and a pointed stick, and wearing a special hunting cloak and gloves, she would sniff her way round the wood, pausing here and there, her nostrils twitching, when she caught a whiff of her prey; then at last, with a deadly pounce, she would fall upon her victim, and poke his putrid carcass into her basket. At the end of the day's sport, the catch was brought back and burnt in the deepest secrecy on the drawing-room fire, with the door locked; *because of the morals of the maids*.

[pp.135-6]

Who was Aunt Etty ? She was Charles Darwin's daughter!

In all the enchanted pages about England's rural life that W. H. Hudson gave to the world around the turn of the present century, there are scarcely a half dozen references to mushrooms. Once he conveys in a sentence or two the magic spell cast on the perceptive beholder when he first discovers a 'fairy-ring' - those meadow mushrooms that oftentimes grow in perfect circles, the circles expanding by tiny stages each year through decades and even perhaps centuries. Elsewhere Hudson speaks of his having gathered mushrooms, but from the colorless reference it seems clear that he was speaking only of the ordinary field mushroom. Thus even Hudson, with ah¹ his sensibility to nature, never opened his eyes to the mushroom world.¹

Thoreau did somewhat better. His allusions in *Walden* are trifling, but in his superb *Journals* he speaks of the fungi time and again. In passages of luminous beauty he vibrates to their visual appeal: suddenly he is off with a theme like this: "The most interesting domes I behold are not those of Oriental temples and palaces, but of the toadstools." He ponders over and over again on the strangeness of these lowly organisms. He philosophizes, and with his teetotaler's bias not always happily: "The life of a wine-bibber is like that of a fungus..." In all that Thoreau says of the mushrooms, for a Russian something is lacking. He views the mushrooms as he contemplates the stars, without touching or smelling or tasting them. Not once does he convey to the reader a carnal sensation. Somehow

i. *The Hind in Richmond Park*, Chap, ix; *The Book of a Naturalist*, Chap. xv.

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we cannot picture Thoreau greedily stirring a stew of savory mushrooms over his stove in his hermitage at Walden; that man's saliva never runs. There is something of the eunuchoid aesthete about him. He is too pure to be fun.

But a similar insensibility afflicts even those whose business it is to discuss culinary matters. As recently as 1943 an eminent American gourmet in a book about food declared that there were two schools when it came to preparing fresh mushrooms for the table - those who peeled them and those who didn't.¹ For the Russians, how irrelevant is this 'either-or' dichotomy as a key to the culinary possibilities of the multitudinous world of the mushrooms! It is as though a critic of music should say that when it comes to making music, there are two schools of performers - those who stand and those who sit. Whenever there is discussion of Russian cooking, it is easy, by a few discreet inquiries about mushrooms, to discover those who know whereof they speak.

The herbals of old served as botany books, medical books, and cookbooks; they were not composed as contributions to the *belles lettres*. It might be thought that in the flood-tide of English literature, the poets with their heightened insight would have shown themselves aware of the sensuous beauty of the mushroom world. Not at all. On this subject the English poets missed their chance to be emancipators. Chaucer and Milton ignore the mushrooms, and so I think does Wordsworth, the poet of nature and humble things. Thomas Gray seems to have overlooked those that adorned his country churchyards. Robert Burns brings them in, but only once, in his verses to William Creech, and they serve merely to turn a rime:

Now gawkies, tawpies, gowks, and fools. . .
May sprout like simmer puddock stools;

'puddock' meaning toads.

Shakespeare refers perfunctorily to mushrooms once, in *The Tempest*, and in *Troilus and Cressida* a character dismisses another with 'Toadstool!' as an epithet. Indeed, for Shakespeare the two words serve little use beyond swelling his already immense vocabulary count. Apparently 'toadstool' was an accepted term of abuse in the 17th century: William Penn in the hot flush of his then recent religious conversion denounced the Vice-Chancellor of Oxford as 'Thou poor mushroom!' - a form of address that a Russian would surely misconstrue as a term of endearment.

i. Richardson Wright, *The Bed-Book of Eating and Drinking*, Lippincott, Philadelphia, 1943, p. 26.

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In the 18th century the British continued to belabor the poor fungal tribe with a cold, unrelenting hate marvelous to see. Tobias Smollett in 1757 produced in Drury Lane an extravaganza called *The Reprisal; or, the Tars of Old England*, a feeble satire on patriotism and the conventional ideas about the French. The villain is the commanding officer of a French frigate, on whose ship the action is laid. He is a "musty, vain, French martinet", a ridiculous cad, and he carries the name of Monsieur le Marquis de Champignon!

For this aspersion on mushrooms Smollett was to be repaid in kind, and with interest. He published his famous *Travels through France and Italy* in 1766, a narrative memorable for its angry comments on everything that the irascible Scottish physician saw and experienced. The critics took him to task especially for his inability to perceive any artistic virtue in the Pantheon or the Medicean Venus. Two years later, almost as a riposte to Smollett's book, Laurence Sterne brought out his sensationally successful *Sentimental journey*, and there near the beginning he pays his compliments to Smelfungus, the pseudonym that he bestows on Smollett and that Smollett to his dying day never lived down. The name is a key to the Englishman's attitude toward mushrooms: knowing Smollett as we do and Sterne's feelings about him, we discover what fungi and their smell meant for them and for Sterne's popular following. The earthy smell of decaying leaves and compost heap, of dank mushrooms growing in rich clusters, the smell that the French call l'odeur du terreau, is pleasing to all who love simple and genuine things. Moreover, the mushroom tribe in fact offers the widest range of smells, not just one and that one foul. Indeed, as connoisseurs know, each species breathes its individual olfactory signature. There was of course a phonetic echo of Smollett's name in Sterne's insulting epithet, the kind of punning suggestion that Sterne loved.

Here, then, is salacious Sterne on Smollett:

The learned *Smelfungus* travelled from Boulogne to Paris - from Paris to Rome - and so on-but he set out with the spleen and jaundice, and every object he pass'd by was discoloured or distorted -. He wrote an account of them, but 'twas nothing but the account of his miserable feelings.

I met Smelfungus in the grand portico of the Pantheon - he was just coming out of it - *'Tis nothing but a huge cock-pit*, said he - I wish you had said nothing worse of the Venus of Medicis, replied I - for in passing through Florence, I had heard he had fallen foul upon the goddess, and used her worse than a common strumpet, without the least provocation in nature.

I popp'd upon Smelfungus again at Turin, in his return home; and a sad tale of sorrowful adventures had he to tell, "wherein he spoke of moving accidents by flood and field, and of the cannibals which each other eat: the Anthropophagi" - he had been flea'd

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alive, and bedeviled, and used worse than St. Bartholomew, at every stage he had come at -- I'll tell it, cried Smelfungus, to the world. You had better tell it, said I, to your physician.

In his next paragraph Sterne takes another traveler to task, some Croesus whom he dubs Mundungus, a word, now fallen into disuse, that meant 'offal', 'refuse', 'filth'. A few years later, in the lySo's, Sterne's Smelfungus and Mundungus turn up again, in a satirical poem, *The Children of Thespis*, by 'Anthony Pasquin', the pen-name of a shady journalist named John Williams. He too vents psychopathic loathing on the inoffensive fungi:

Thus scarceness gives value to dirt and mundungus,
And dignifies that Nature meant as a fungus.

But fungus and filth have their uses and buyers,
Hence oceans of urine are purchas'd by dyers;
And lawyers, who liv'd but to generate strife,
May serve when they're dead for th'Anatomist's knife.

Let not the squeamish reader shrink from the stench of Sterne's Smelfungus: it curls upward from the very viscera of the Englishman's mycophobia. Contrast that smell, if you please, with the Russian's scale of values. On August 22, 1851, Alexej Konstantinovich Tolstoy penned a letter¹ from the country to the young woman whom he later married and his subject was the odor of mushrooms:

I have just returned from the forest where I went gathering mushrooms and found many. Once you and I discussed how odors evoke the memory of things forgotten for many a year. For me the smells of the forest possess this faculty more than any others, but perhaps this is only because I passed my whole childhood in the woods. Just now I smelled a *ryzhik*, and as in a flash of lightning I saw my whole childhood, in all its details, up to the age of seven. The vision came and was gone in a thousandth part of a second. Each kind of mushroom has its own odor, but always it brings back to us the past . . .

The common English names for the wild plants are rich in poetry, and perhaps no English poet of standing has made use of a wider variety of such names than John Clare, the farm-laborer who passed most of his adult life within the confines of a lunatic asylum. Yet in the two volumes of poor Clare's published poems I have discovered only one casual reference to 'mushroom buttons'. True, most of his verses still lie unpublished, and we must not exclude the possibility that this observant and original rustic poet somewhere paid

I. See his collected works, *Sobranie Sochinenii Izdanie*, St. Petersburg, 1908, edited by A. F. Marks, vol. iv, p. 37.

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fitting obeisance to the mushroom world. Possibly his learned editors, in making their selections, rejected some eloquent paean to the fungi, considering the mere choice of such an outlandish theme sure evidence of a weak mind wrestling with an access of lunacy.

On those rare occasions when the great English poets deign to pay serious attention to mushrooms, they habitually link these lovely creatures with death and decay. Keats refers to the 'cold mushrooms' in *Endymion*, and how deathly cold he makes them sound! Browning in *Paracelsus* strikes the same distressing mortuary note:

... as in the autumn woods
Where tall trees used to flourish, from their roots
Springs up a fungous brood sickly and pale, Chill
mushrooms coloured like a corpse's cheek.

Tennyson in *Gareth and Lynette* is as unpleasant about mushrooms as so decorous a poet knows how to be. The beautiful Lynette believes that Sir Gareth, the knight assigned to champion her cause, is a mere kitchen scullion, and she vents her contempt for him:

... She thereat, as one That
smells a foul-flesh'd agaric in the holt, And deems
it carrion of some woodland thing, Or shrew or
weasel, nipt her slender nose With petulant thumb
and finger, shrilling, 'Hence!'

'agaric' meaning a gilled mushroom. How clear in this recurring image of the famous poets is the echo of that folk detestation which the herbalists first recorded! Keats and Browning and Tennyson may have recalled Edmund Spenser's lines, when in *The Shepheardes Calendar*, to heighten the sense of winter's gloom, he forces mushrooms to grow, contrary to nature, in cold dark December. Of course living fungi can sometimes be found in mid-winter but no observant person would think of associating the whole rich panoply of the mushroom world with the dying year. Spenser is contrasting the winter scene with summer:

Where I was wont to seeke the honey Bee
Working her formall rowmes in Wexen frame:
The grieslie Todestool growne there mought I see
And loathed Paddocks lording on the same. And
where the chaunting birds luld me asleepe, The
ghastlie Owle her grievous ynne doth keepe.

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If Spenser is fantastical, just listen to Shelley. In a strange and disturbing poem entitled 'The Sensitive Plant', wherein he, exactly like Spenser, contrasts the beauty of a summer garden with its desolate winter state, he also does violence to nature by associating early winter with the growth of loathed weeds and fungi. England's poets of the romantic period have long been praised for their close attention to nature, but in the light of these stanzas of Shelley's, one is tempted to ask how far their observations went. Did they merely know more than their predecessors? However that may be, Shelley in this poem was so successful in inspiring disgust that his widow in 1839 took it upon herself to suppress one of the stanzas, which we print below in italics, and it was not restored to the canon of his works for almost a century. That long-suppressed stanza exhales the triple distillate of the Englishman's loathing for toadstools: it is the supreme literary expression of this violent Anglo-Saxon prejudice. Ariel, who at other times had caught in flight the skylark's ecstasy and divined the secret of the wild West Wind and breathed the magic spirit of Night, here chooses to plumb the abysses of physical revulsion, and in the very climax of his frenzy, the imagination of this Englishman calls forth rotting mushrooms! Yes, and rotting mushrooms make him think of rotting human flesh! How bizarre for a Russian is this association of ideas that is forever recurring in the English poets!

Between the time of the wind and the snow,
All loathliest weeds began to grow,
Whose coarse leaves were splashed with many a speck,
Like the water-snake's belly and the toad's back.

And thistles, and nettles, and darnels rank, And
the dock, and henbane, and hemlock dank,
Stretch'd out its long and hollow shank, And
stifled the air till the dead wind stank.

And plants, at whose name the verse feels loath,
Filled the place with a monstrous undergrowth,
Prickly, and pulpous, and blistering, and blue,
Livid, and starred with a lurid dew.

And agarics and fungi, with mildew and mould,
Started like mist from the wet ground cold; Pale,
fleshy, as if the decaying dead With a spirit of
growth had been animated!

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*Their moss rotted off them, flake by flake, Till the
thick stalk stuck like a murderer's stake, Where rags
of loose flesh yet tremble on high, Inspecting the
winds that wander by.*

Spawn, weeds, and filth, a leprous scum,
Made the running rivulet thick and dumb,
And at its outlet, flags huge as stakes
Dammed it up with roots knotted like watersnakes

And hour by hour, when the air was still, The
vapours arose, which have strength to kill: -At morn
they were seen, at noon they were felt, At night they
were darkness no star could melt.

Emily Dickinson, though dead, has become a major poet of our times, having emerged like a nova in our literary sky long after she herself had sunk back into darkness. Her idiom has caught the fancy of the modern world, but did she do more than clothe old emotions in a new dress? Among her poems is one about mushrooms, written around 1874 and first published in 1891. It consists of five quatrains, of which the last distils the essence of the whole. Listen to those concluding lines, and you will hear only the old, the benighted theme:

Had nature any outcast face,
Could she a son condemn, Had
nature an Iscariot, That
mushroom - it is him.

For 'Iscariot' there is a variant that reads 'Apostate'.

The mere thought of fungi seems enough to arouse loathing in an Englishman's breast. This revulsion is so dependable that when a novelist seeks to invoke horror, he need only drag in the toadstools. By this device A. Conan Doyle launches the story of *Sir Nigel*, on the eve of the Black Death, in October of the year 1348:

. . . the rain had ceased at last, and a sickly autumn sun shone upon the land which was soaked and sodden with water. Wet and rotten leaves reeked and festered under the foul haze which rose from the woods. The fields were spotted with monstrous fungi of a size and color never matched before - scarlet and mauve and liver and black. It was as though the sick earth had burst into foul pustules; mildew and lichen mottled the walls, and with that filthy crop, Death sprang also from the water-soaked earth.

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How different would be the description of such a scene by a Russian, who loves his moist Mother Earth, the autumn haze, the 'mushroom-rain', the humus rotting in the woods, and above all a splendid crop of monstrous mushrooms! The Russian reader would put imperious questions to Conan Doyle. Would he please describe those mushrooms more satisfactorily. Were there four kinds each of a single color, or were all the specimens exhibiting all four colors? Precisely what species are we dealing with? Were not most of them edible or even delectable? Why did not the English countryfolk turn to and gather and preserve them, by drying or pickling, to fortify their larder for the winter, the better to stand off any perils that the season might bring? . . . 'Foul pustules', forsooth!

In the whole rich world of English literature, I have happened on only two references to mushrooms that express an affection for the 'earthie excrescences' of the unfriendly herbalist, the 'corpse's cheek' of the poet. The writers of these lines were never famous and are now almost forgotten. The first was William Parkes, the author of one little book, *The Curtaine-Draiver of the World*, published in 1612 in London. His reference to mushrooms is slight, but who that loves them will ever forget this vignette, truly observed, of the mushrooms clustered around the trunk of a cedar tree:

. . . that Caedar . . .
Under whose girdle, nay beneath whose knee,
The little Mesrumes louingly agree, [p. 20]

The second was a cobbler named James Woodhouse who in 1787 penned an autumnal ode, to be found in a volume entitled *Norbury Park*, in which he first described the common field mushrooms which

proudly spread their bonnets blythe, With
coverings form'd of silk and snow And lin'd
with brightening pink below.

He then goes on to the 'toadstools', in whose forms and hues this Englishman concedes that he finds 'some solace'. Their

tapering stems, robust, or light, Like
columns catch the searching sight; Like fair
umbrellas, furl'd, or spread, Display their many-
colour'd head; Grey, purple, yellow, white, or
brown, Shap'd like War's shield, or Prelate's
crown —

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Like Freedom's cap, or Friar's cowl, Or
China's bright inverted bowl -And
while their broadening disks unfold Gay
silvery gills, or nets of gold, Beneath
their shady, curtain'd cove, Perform all
offices of love.

Whatever their failings as poetry, these verses reveal an independent mind, an observant eye, and a sympathetic heart.

It is said that there are counties in England, notably in the Midlands, where the *rhodopaxillus nudus* is regularly gathered and offered in the market-places under the lovely name of blewits or blue-caps. The country-folk concerned with this humble harvest must possess some knowledge of wild mushrooms handed down from long ago. They might see the humor, invisible to most of their compatriots, in the following episode as told to me by Eric Whittle, an understanding English friend: "One day one of our lady audit assistants came in with a bag of what I identified afterwards as ceps, which she had bought from a hawker. She observed that they were unusual mushrooms but the hawker had said they were edible. After a discussion amongst my colleagues they were thrown into the dustbin. For my part I was a new member of the Staff and my opinion was not asked." (The French *cepe* is often called in English the 'edible boletus', a heavy and unappetizing name, and a misleading one, implying as it does that all other boleti are inedible. My friend in his anecdote has wisely rendered '*cepe*' as 'cep', an example that our book follows.)

Robert Graves has passed on to me another anecdote. During the recent war against Germany a Soho restaurateur called Bozzini went gathering ceps in Epping Forest near a secret site of the War Office. When charged with spying he said, "I'm an innocent mushroom collector." "Show me the mushrooms!", replied the policeman. Bozzini produced a suitcase full. "That proves you're a spy," said the constable. "Them's toadstools!"

In 1943, when England was beset by mortal enemies, John Ramsbottom, the English mycologist, tried to augment and diversify the spare menu of his countrymen by a series of sensible lectures on the edibility of many wild fungi. EDIBLE TOADSTOOLS was the caption used by the great *Times* on September 29, 1943, in reporting one of these talks. Could a more uninviting headline be devised; Things that are merely edible may be scarcely palatable, and toadstools by the innermost meaning of the word are unfit for the table. Had a Russian been charged with editing that news item, he would have enticed his readers with some such headline as WILD MUSHROOMS IN FINE COOKERY.

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For almost four centuries the Russians and the English-speaking world have been eyeing each other, and at one point or another, on one level or another, intermingling. Yet among all the many commentaries on Russia published in the course of that long association, I know of only four that draw attention to the Russian passion for mushrooms. The earliest was by an English traveler,

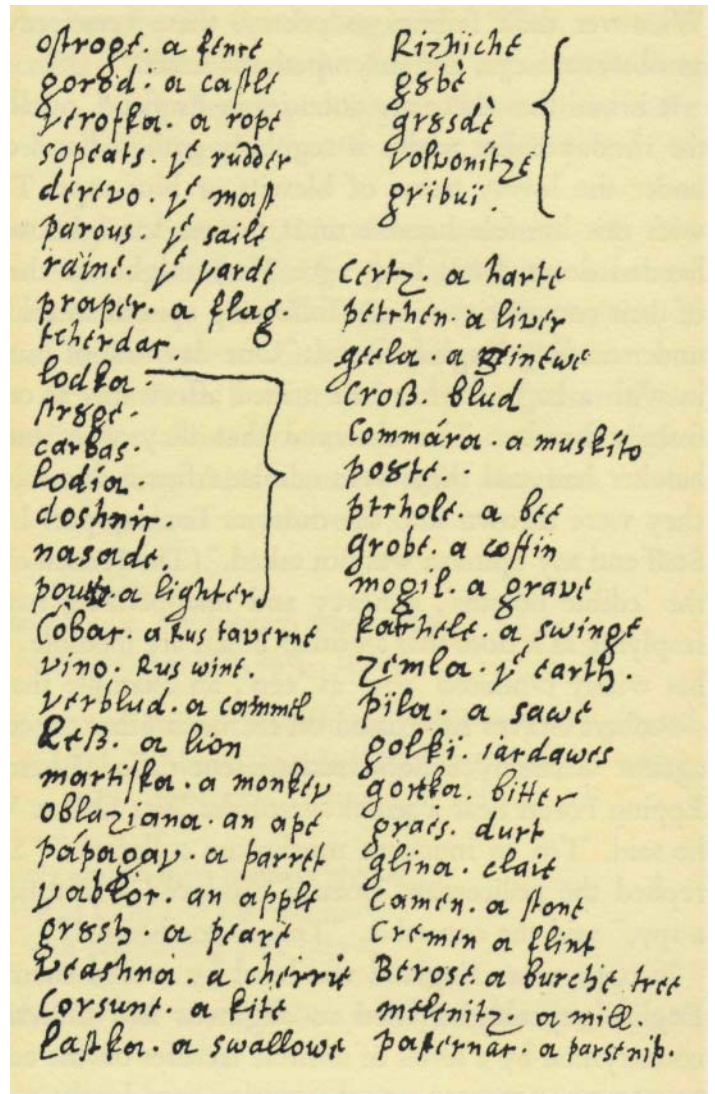
Fig. i

EARLIEST REFERENCE TO
RUSSIAN FUNGI IN ENGLISH

Page from Russian-English
word-list of Richard James,
1619, citing five kinds of
mushrooms without English
equivalents:

*ryzhik, guba, gruzd',
volonitsa, grib*

Bodleian, ms. James 43*



Richard James, who in 1619, while visiting Muscovy, composed an extensive glossary of the Russian language, representing the Russian sounds by a system of transliteration of his own devising. He translated all of the Russian words into English, but when he came to the various kinds of mushrooms, he had to admit defeat: he lists five words and gives no translation! His glossary has

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never been published in full: the manuscript lies in the Bodleian Library.

From 1660 to 1669 the Tsar Alexei maintained at his court an English physician, Samuel Collins, whose valuable little book, *The Present State of Russia*, appeared in London anonymously in 1671. The author, unfortunately, died before the manuscript was completed, and the concluding chapter, entirely devoted to Russian mushrooms, appears to have suffered peculiarly from the ministrations of an unhappy literary executor. The text of this chapter is a mixture of scientific pretensions and fancy, and the illustrations are quaint aberrations.

Of a different order are the observations of an English clergyman, William Coxe, who embarked on a tour of Eastern Europe in 1773 and who in 1784 brought out in three volumes his *Travels into Poland, Russia, Sweden and Denmark*. He was an honest, laborious, and careful observer, whose pedestrian mentality saved him from tincturing his observations with fancy. In the opening chapter of Book IV he describes the condition of the Russian peasants as he saw them. He brings in the mushrooms, and both for this reason and because the whole tenor of his favorable comments about the muzhiks runs counter to the preconceptions of the West on this subject,! shall quote the passage with its context:

The peasants are well clothed, comfortably lodged, and seem to enjoy plenty of wholesome food. Their rye-bread, whose blackness at first disgusts the eye, and whose sourness the taste of a delicate traveller, agrees very well with the appetite; as I became reconciled to it from use, I found it at all times no unpleasant morsel, and, when seasoned with hunger, it was quite delicious: they render this bread more palatable by stuffing it with onions and groats, carrots or green corn, and seasoning it with sweet oil. The other articles of their food I have enumerated on a former occasion; in this place I shall only observe that mushrooms are so exceedingly common in these regions, as to form a very essential part of their provisions. I seldom enter a cottage without seeing great abundance of them, and in passing through the markets, I was often astonished at the prodigious quantity exposed for sale: the variety was no less remarkable than their number; they were of many colours, amongst which I particularly noticed white, black, brown, yellow, green, and pink. The common drink of the peasants is quass, a fermented liquor, somewhat like sweet-wort, made by pouring warm water on rye or barley-meal; and deemed an excellent anti-scorbutic. They are extremely fond of whiskey, a spiritous liquor distilled from malt, which the poorest can occasionally command, and which their inclination often leads them to use to great excess.

The worthy Archdeacon Coxe seems not to have asked himself the reason for the abundance of mushrooms in the peasants' fare, whether it was owing to a greater abundance of fungi in the woods and fields of Russia, or simply to the habitual gathering of a normal crop. There is no reason to suppose that Russia produces more mushrooms than the United States or England.

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Almost forty years after Mr. Coxe published his *Travels*, another English physician, Dr. Robert Lyall, brought out in 1823 a volume entitled *The Character of the Russians*, in which he dwelt at length on the Russians' addiction to mushrooms. He even undertook to record the common names used by the Russians and to identify them.

The knowledge of edible mushrooms [said Dr. Lyall], like a tradition, has been handed down, in Russia, from parent to child, through a series of ages; and the discrimination of these, from the hurtful or poisonous mushrooms, is learned by practice, in the years of infancy and youth... Indeed [he goes on], mushroom-gathering or hunting forms a great part of the occupation of the Russian peasants, boys and girls, as well as of the women at times, and is an amusement, in the country, of the nobility, males and females, old and young, who make short excursions to the woods in the neighborhood of their estates, and spend a few hours in selecting one of the greatest delicacies of the epicures.

With a rare perception of the realities of Muscovite life, Dr. Lyall continued:

Besides the enormous quantities of mushrooms which are brought fresh to market during the summer months, and which are immediately bought up, the better sorts by the nobility, the inferior kinds by the lower classes and the peasantry, a great abundance is preserved by the peasants in the country, who, after retaining a quantity sufficient for their own consumption, bring the surplus to town. They are brought throughout the whole year, in a dried state on strings, in cart-loads, and sold in all the provision markets,... and in all the small grocery-shops in the city. Sometimes even salted and pickled mushrooms may be bought.

After a courageous effort to identify the various kinds of mushrooms, Dr. Lyall discusses mushroom cookery:

Mushrooms are eaten fried, boiled or pickled, while their season endures, by all classes. . . . They are fried on hot ashes, or in a frying-pan; they are boiled alone; they are boiled with *shchi* or cabbage soup; they are roasted with butter alone, or oftener with butter and *smetana* or sour cream. They also enter into the composition of some puddings and pies. The latter are generally eaten with soup or with *shchi*. Mushrooms are often served up with beef-steak, or roast beef sliced, either alone or mixed with potatoes, carrots, turnips, cabbage, asparagus, &c., and sauce. They are excellent when prepared with cutlets and rich sauce, duly seasoned.

Transfixed with apprehension, the Western world seems today in a horrid trance, stop-watch in hand, as it gazes on Russia. It is wholesome to read the many fine books about Russia that were written in less anxious times, when authors and readers were relaxed, and when there were opportunities for deliberate observation.

PLATE VI

Jean-Henri Fabre. *Armillariella mellea* (Fr. ex Vahl) Pat.
French: *pivoulade*.



III

MUSHROOMS AND HISTORY

When mushrooms abound, there'll be war around.

An old Russian belief.

... And to be briefe, only the Moscouites may seeme that nation which hath not felte the commodities of peace.

RICHARDS EDEN *in* J555.¹

aL this talk of mushrooms would be idle, were the contrast between Russian and Anglo-Saxon attitudes a random thing. But these mushrooms hint at the answer to bigger questions, far beyond food and cookery. A people who have always had an abundance of other foods are little tempted to brave the initial perils of the mushroom world. However, in the desperate exigencies of all-out war, of chronic war through decades and generations and centuries, of defensive warfare with homes ravaged and farms left untended, where the unslaughtered remnants of the population hide from the pitiless invader in woods and swamps and fields - under these conditions, I suggest, men and women will discover the humble mushroom, and will prove the various kinds by trial and error, and make friends among them in time of need. For mushrooms, springing up almost overnight, will be God's manna to a people driven from their homes into the wilderness. And the knowledge thus gained, joined with emotions of gratitude born of the circumstances, will not be soon lost. During the blessed intervals of peace when the fields yield their normal increase, the various mushrooms, along with the wild berries and fruits and the cultivated crops, will be assigned in men's minds their appointed stations in the annual procession of the seasons, and will be clothed with fond associations, and in every kitchen, on every stove, sundry ways will be devised to bring out the virtue peculiar to each friendly kind. There is an old belief in Russia that when mushrooms abound, war is in the offing. The thoughtless intellectuals of the world despise such homely sayings, which on the surface are nonsense. But oftentimes those sayings are the cryptic expression of experience graven deep in the recesses of a people's past. Mushrooms are not harbingers of war: it is the other way round. When the dogs of war are running loose across the fair countryside of Russia, the people, hard-pressed,

i. *Notes upon Russia*, Hakluyt Society, 1st Series, vol. 12, p. 197.

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know that mushrooms may soon be their mainstay.¹ Our theory finds disturbing support in a book published in Prague just as the Communist curtain was about to descend on that city. The book dealt with Czech folk food. A peasant speaking of a mushroom called *horyl* (from *hofeti*, 'to burn'), said that it burnt the mouth even when thrice boiled, yet in the 'great hungers' it was always eaten, and when hunger and the pest would return, again it would be eaten.²

This link between war and mushrooms can be detected, albeit faintly, in the Anglo-Saxon world. It is said that during the final phases of the American Civil War the people in the devastated stretches of the South turned to mushrooms for sustenance. Certain it is that a famous botanist living at that time in the Carolinas, the Rev. M. A. Curtis, wrote how "during the late war I paid no attention to Botany, except to the edible mushrooms, from which I have gotten many a substantial and luxurious meal."³ He gladly shared his esoteric lore with the neighbors, who, food being scarce, were apt pupils, and such was his success that he embarked on a book to spread the useful tidings. It was to be called *Mycophagia Americana*, but by the time it was ready, the war was over and publishers were not interested.

In England during the recent war there were public and private efforts to increase the consumption of wild fungi. We know one elderly Russian lady who for a time made good money gathering *belyegriby* on Wimbledon Common, in full sight of the wondering English. She pickled or precooked them and sold them to a fashionable restaurant. But, although England's peril was acute, there was, as things turned out, little actual hunger; and furthermore, when measured against the long history of a people, the crisis was brief. The times were not bad enough for mushrooms to take hold. Today there are those who fear that England's bitterest trials lie ahead, in her peace-time efforts to feed herself. If chronic want, real want, should for the first time in history beset the English people, there will be the mushrooms to turn to, and a precious reserve they will prove to be.

More than a century ago a famous French chef, Louis Eustache Ude, propounded an ingenious and amusing theory to explain the lackadaisical attitude of the English toward food and cookery - an ingenious theory it was, but, as I shall show, completely unsound. He began by denouncing physicians as 'enemies of the art' of cooking, and then he went on:

1. But the Russian saying seems to be widely current in Europe. Consult the entry 'Pilze' in *Handwörterbuch des Deutschen Aberglaubens*, by E. Hoffmann-Krayer, 1935-6, where we find the German dialectical *Viel Schwamma* - *vieljamma*, the Italian *anno fungato* - *anno tribolato*, and the French *an de cepere* - *an de misere*, reported in the Basses Pyrenees.

2. See Mrs. M. Ulehlova-Tilschova's *Ceskd strava lidovd*, Prague, 1945, p. 57.

3. Neil E. Stevens quotes Curtis in *The Scientific Monthly*, August 1919, p. 162.

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I am greatly concerned at being obliged to combat a still more powerful, though amiable, enemy to Cookery. The Ladies of England are unfavorably disposed toward our art; yet I find no difficulty in assigning the cause of it. It is particularly the case with them (and indeed it is so in some measure with our own sex) that they are not introduced to their parents' table till their palates have been completely benumbed by the strict diet observed in the nursery and the Boarding Schools.¹

The baneful influence of the nursery and the boarding school is doubtless all that the author said, but one would have liked to remind the great Maitre that the rudiments of any distinguished cuisine grow out of the people, the whole people, and nothing but the people; that the leisure class merely spin refinements for the most democratic of the arts; and that the people by and large have never known either nursery or boarding school. If the English in general seem to the rest of us indifferent to good food, and some of them even disapproving of the fine art of pleasing the palate - if the English bill of fare lacks variety and the good ingredients are spoiled in preparation - these shortcomings of a noble people must go back to deeper, broader causes than the child-life of the well-to-do. For a thousand years England never knew war - war as others and especially the Russians suffered it - and England has never known prolonged, desperate want. Hardship is the school in which people forget food tabus, and acquire that deep reverence for food and its preparation that inspires a great cuisine. Everyone who knows anything about Russia will recall that simple and moving ceremony of hospitality in which bread and salt, symbols of food, are offered on a tray to the honored guest. That ceremony is an ancient, almost sacramental expression of reverence for food, and Russia's history gives meaning to that reverence. In the Anglo-Saxon world only prolonged want will, some day perhaps, bring about a comparable respect for food. If England, that land unique in moral resources and spiritual unity, be destined to endure privation over the coming generations, the hardships will most certainly give birth to new and lustrous chapters in her history, chapters of stirring and triumphant drama - and incidentally, I predict, they will bring about at last a worthy English cuisine. Perhaps the reader by now is protesting that I have overlooked England's famous warrior past. Oh, yes, I know that her history is studded with decisive battles. Crecy and Blenheim and Trafalgar and Waterloo, glorious victories and sometimes glorious defeats. But they were all fought abroad, by a handful of men at sea or in other people's homes. They were fought way down yonder among the heathen, somewhere off Flores in the A9ores. Those wars were like

1. *The French Cook*, by Louis Eustache Ude, one-time cook to Louis XVI and the Earl of Sefton. This work went through many editions in both England and the United States. The early editions carried an essay entitled, 'On Cookery and its imputed ill effects on health', whence I take my quotation.

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big-game hunting, stepped up another dimension. Of course there were civil wars also, back in the lyth century, and the I5th, and under King Stephen, and there were border frays along the way. But civil wars, however cruelly fought, lack the ultimate sting, for, whoever wins, members of the family retain possession of the homestead. No intruder takes over the patrimony. These comments about wars go for the United States too; broadly speaking, the tally until our own generation adds up to two civil wars (including the War of Independence) and a few brief expeditionary ventures.

Yes, whoever seeks seriously to understand Russia must make the needed effort of intellect and imagination to comprehend the full and awful meaning of war in the history of the Slavs. This is the first and great imperative. (In the winter of 1939-40, when the Finnish army seemed for a time to hold its own with heroic courage against the Russian forces, how often did my American friends remark to me that, after all, the Finnish successes were not surprising, since Russia had had no warrior past!) As compared with the West, and especially the English-speaking world, war for the Russians has been a calamity of a wholly different and greater order of magnitude. Pause for a moment and consider this. In the wide range of the English vocabulary are there words of more awful potency than 'Huns' and 'Tartars'? It was in the fourth century that the Huns burst like a rocket out of Asia into Europe, and the Mongol hordes followed them seven centuries later. This was all long ago and far away. The Huns in the end were stopped on the fields of France, and the Tartars never got into the West. Yet the mere names of these far-off peoples of ages past still trail clouds of terror in the minds of nations then unborn, in continents then unknown. The earliest description of the Tartars by an unidentified Englishman who sojourned among them will explain in some measure the fearful impact of that strange and pitiless people on the European mind:

They be hardie and strong in the breast, leane and palefaced, rough and hufshouldred, having flatte and short noses, long and sharpe chinnes, their upper jawes are low and declining, their teeth long and thinne, their eye-browes extending from their foreheads down to their noses, their eies inconstant and blacke, their countenances writhen and terrible, their extreame joynts strong with bones and sinewes, having thicke and great thighes, and short legs, and yet being equall unto us in stature: for that length which is wanting in their legs is supplied in the upper parts of their bodies.¹

The Slavs, let us remember, met the Huns face to face, and the Russians bowed to the yoke of the Tartars for three full centuries. Nowadays we hear

i. Richard Hakluyt's *Principal Navigations*, Hakluyt Society, extra series, Glasgow 1903-4, vol. I, pp. 50, 53.

PLATE VII

Jean-Henri Fabre. *Rhodopaxillus nudus* (Fr. ex Bull.) R. Maire.
English: *blewit*; French: *pieu bleu*.



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glib talk of 'genocide', a new word meaning the murder of a people; but the Slavs dwelt for centuries on the highways of the Great Migrations, and, had their powers of survival been less, they would have been absorbed or exterminated many times over. Other nations and tribes did disappear in the ethnic maelstrom of the Steppes.

'Huns' and 'Tartars' are not the only linguistic contribution to the West of the Asiatic invaders. No one knows for sure the origin of the word 'ogre'; it probably comes to us from the people called Ugri, known to us as the Hungarians, who drove or were pushed into the Danubian plain in the 5th century. Our word 'horde' comes from the language of the Tartars. For them (as for the Russians to this day) *ordd* is simply the headquarters of a marching host, and the Golden Horde was the supreme headquarters on the Volga of the Tartars who subjugated the Slavs of the steppes and of Moscow. In a lexicon that comes down to us from the library of the poet Petrarch (the *Codex Cumanicus*) we learn the curious fact that the Asiatic invaders referred to the Holy See of Rome as the Horde (*ordd*) of Christendom. The West in taking over the word changed its meaning to cover the swarms of ferocious invaders. In India the same word, now *Urdu*, came to mean the language of the nomad camps.

The Steppes - those moist, fertile plains that fan out to the north of the Black Sea - are the monumental stage on which from the beginnings of history East and West have clashed, in an historical drama of epic grandeur. Like the whirling waters of a rising tide that contend from divers directions for the mastery of a level beach, through thousands of years a succession of migrating tribes from East and South and West have flowed into the Steppes, and overrun them, and battled with each other for possession; and then with the passing of time have vanished into the earth. In recent centuries the Turks made their vain bid for title; before them, the Tartars, speaking a kindred dialect. Before the Tartars came the Polovtsi, and before them the Pechenegs. These last-named warrior peoples are scarcely known to Westerners, but they left dreadful, indelible scars on Russian memories. Before them came out of Asia the hard-riding Avars, and before the Avars the Huns. The Avars and the Huns made general use of bridles, stirrups, and saddles. With their horses these mounted warriors revolutionized warfare, and rendered the famed Roman legion obsolete. Before the Huns, from the Baltic, there swept down into the Steppes and Crimea the Visigoths, the Ostrogoths, and the Goths. Those Goths were securely settled in the Crimea by 250 A.D., and there they lingered on for a thousand years. In the middle of the 15th century a famous traveler, de Busbecq, encountered in the Turkish dominions a few individuals who still

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could recall some words of their ancestral Teutonic tongue. And down even to our own days, in the Caucasus, there is a fair-haired people whose neighbors call them, erroneously, the Goths. Before the Goths, the Sarmatians, of Persian origin, ruled the Steppes for centuries, and before them the Scythians, who were dwelling in the land when the Greek historian Herodotus went sightseeing up the Dniepr River. And before the Scythians legend tells us of the shadowy Cimmerians.

In thus spanning the millenniums we have omitted many famous peoples: the Scandinavians, who swept down from the North through the waterways of Russia to the very gates of Byzantium; the Greek and later the Italian colonial empires in the Black Sea; the Ugri or Magyars who crossed the Steppes to settle in what we call Hungary; the Bulgars who once dwelt in the Volga valley and now till their cherished Balkan soil; the strange and mighty Khazar Empire on the northern slopes of the Caucasus, whose sovereign had to be Jewish by religion; the Alani, and the Assi who gave their name to the Sea of Azov; and many another tribe of uncouth name - the Utiguri, the Kutriguri, the Onoguri - who lived out their day and vanished.

Compared with those Homeric dramas of the past, how fleeting and insignificant was Hitler's stab across the Steppes to Stalingrad. In the presence of those Great Migrations, the history of Western Europe, at least up to the Age of Exploration, seems to be acted out in miniature, and to give off a slightly foetid odor as of a hot-house. Viewed in the light of all human history, how unusual must be the introspective, intensively developed culture of the communities clustered along the Western fringes of the Eurasian Continent. The world is destined to devote ever more attention to the peoples of Eastern Europe and the Black Sea Basin, and if the West will unflex its intellectual muscles, and exercise its capacity for wonder, and lengthen the focus of its mental vision, what a panorama filled with color and drama will unroll itself!

In the folds of the Caucasus mountains there dwell to this day a score of isolated peoples, with strange languages many of them as curious as the Basque of the Pyrenees. Like the Ark on neighboring Mount Ararat, these peoples have survived the floods of Indo-European and Turkish migrations. They are the ethnographic moraines of the world that was old before the Old World was born. Sarmatians, Scythians, and Cimmerians - those ancient peoples are perhaps mere infants alongside these secluded tribes, whose secrets, if we but succeed in deciphering them, will make the millenniums seem like centuries. Little by little our scholars, in our own times, are piecing together the bits of evidence, and with their aid revising the perspectives in which we view

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both ancient Greece and Rome (and that means us their progeny also), against the background of earlier, Eastern cultures of unfathomed antiquity.

The Black Sea is a deep basin. Its deeper waters are so infused with chemicals that they sustain no life, and are a graveyard for the detritus of human cultures that have passed away. Its stormy surface waters forever rotate in a counter-clockwise flow, suggestive of the human tides that have wheeled around its shores as around a hub from time immemorial. Behind Greece and Rome loom more and more, as our study of the past progresses, the cultures of the Black Sea basin; and the Black Sea becomes the enigmatic eye of history.

The peoples of the Great Migrations erupted into the Steppes explosively, and then in course of time faded away. The Slavs followed different tactics. Their entrance on the stage of history was inconspicuous - an odd thing for the Dramatist to have devised, when you consider the role they were destined to play. Emerging from the neighborhood of the Vistula, they stole imperceptibly into the consciousness of men. Perhaps they figure among the numerous tribes that Herodotus mentions, but he did not make the identification sure. Tacitus in 98 A.D. described the Slavs in his book on Germany, and that was their formal debut in history. A few centuries later, they had spilled out into the Balkans, and by the 9th century the Russians emerge securely established in Kiev. They were a prolific tribe of farmers, spreading like wire-grass along the water-courses. Geographically they were of course European, as European as the Anglo-Saxons. They were European settlers reaching out to the Eastern frontier, and bearing the brunt of Asiatic attacks. (How ironic it must sound in Asiatic ears when uninformed Westerners decry the Slavs as 'Asiatics'!) In the course of ten centuries these European Slavs have pushed the Asiatics out of Europe, and then overrun their own vast Continent to the very shores of the Pacific.) Unlike the looting nomadic warriors from the East, they were a sedentary folk. They belonged to the land and the land belonged to them. There is evidence that in their pagan religion they deified the processes of nature, and above all their Moist Mother Earth. Their attachment to the fertile earth is a thing that Westerners, and especially the English-speaking world, can hardly grasp. The old religion perhaps still runs through their blood. It is the Russian in me that makes me love to plunge my bare hands in the moist warm fertile earth, mother earth, the earth that yields us our daily bread, the food that we reverence as a divine gift, that we worship in the Host. Perhaps we love our mushrooms the way we do because they seem the earthiest of nature's growths. From those pagan times a thousand years ago down to now, the Russians feel themselves attached to the earth viscerally, as by an umbilical

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cord. In the early Slavonic chronicles the Russians are depicted always as farmers, not traders or warriors, and their enemies habitually took advantage of this dependence on the soil to attack their homesteads and villages at harvest time. The Slavs were already then old hands at taking refuge in the woods, just as in the recent war, and those were the circumstances under which, ages earlier, they must have first come into intimate communion with their friends the mushrooms. As the successive waves of nomads spent their initial force, the Slavs resumed their steady pressure and retook the beloved land and pushed on. They were the resistant, tenacious, pushing tortoise, and the invaders were the showy, easy-come-easy-go hares. The Slavs made some progress in the West also, and as late as a few centuries ago, the peasants in Holstein and on the Baltic island of Bornholm were still speaking a Slavic tongue. To this day the Slav-speaking Wends survive in villages south of Berlin. Many of the place-names of Germany are Slavic; Stettin means bristles, and it was the port through which this commodity was exported; and Pomerania is merely Pomorjane - 'inhabitants of the sea-shore'.

The Russians today are a singularly uniform people, as compared with the extreme mixtures in Western Europe. The traits of the Russians are the traits of an Indo-European peasant people indigenous to Europe, first Christianized and civilized under Byzantine influences, and politically shaped by the stern necessity of waging incessant warfare on all sides for the sheer privilege of survival. It fell to them to occupy and defend a desirable land devoid of natural defenses, a rich, land-locked inheritance surrounded by covetous and arrogant enemies. One reason oftentimes given for the relative uniformity of the Russian people has been the absence of mountain barriers in their homeland: the geographical circumstances have encouraged a cultural and ethnic fluidity. But this explanation proves too much: for precisely the same reason they could have lost their identity in the vast steppes, exposed forever as they were to alien peoples on every side, tugging them in every direction. They survived as a homogeneous ethnic group and a cultural entity because, for reasons deeply hidden in the racial strain, they chose to resist foreign encroachments. This struggle has been the theme of Russia's history - the continual temptation to assimilate foreign influences, leading to violent rejection in the interests of self-preservation, and ending in every instance with a deepened sense of their folk identity, but an identity molded by the ordeal of the never-ending struggle, molded positively by acceptance in some measure of foreign influences, and negatively by the self-inflicted effects of violent resistance.

In one of the earliest accounts of Muscovy written by an Englishman, in

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Queen Elizabeth's time, there is an observation concerning the Tsar's wars that could have been repeated with other names at almost any other period:

His enemies with whom he hath warres for the most part are these: - Litto, Poland, Sweden, Denmarke, Lifland, the Crimmes, Nagaians, and the whole nation of the Tartarians, which are a stoute and a hardie people as any under the Sunne.¹

A Continental traveler, Sigismund von Herberstein, writing in Latin a half century earlier, had remarked of the Russians and their horses that "rest is seldom given them, for either they are waging war against the Lithuanians, or the Livonians, or the Swedes, or the Tartars of Cazan; or, if no war is going on, the prince generally appoints 20,000 men every year in places about the Don and the Occa, as guards to repress the eruptions and depredations of the Tartars of Precop."

We saw in the recent war the tough soldier that the Russian makes. His qualities were not born overnight, nor were they the fruit of a single generation. He was the heir to an old fighting tradition. Read, if you will, this account of the same soldier four centuries ago:

They are a kinde of people most sparing in diet, and most patient in extremitie of cold, above all others. For when the ground is covered with snowe, and is growen terrible and hard with the frost, this Russe hangs up his mantle, or souldiers coate, against that part from whence the winde and Snowe drives, and so making a little fire, lieth downe with his backe towards the weather: this mantle of his serves him for his bed, wall, house and all: his drinke is colde water of the river, mingled with oatemeale, and this is all his good cheere, and he thinketh himselfe well, and daintily fedde therewith, and so sitteth down by his fire, and upon the hard ground, rosteth as it were his wearie sides thus daintily stuffed: the hard ground is his feather bed, & some blocke or stone his pillow: and as for his horse, he is as it were a chamberfellow with his master, faring both alike. How justly may this barbarous, and rude Russe condemne the daintinesse and nicenesse of our Captaines, who living in a soile & aire much more temperate, yet commonly use furred boots and clokes >

It is safe to assume, I think, that this hardy Russ knew his mushrooms.

I. Richard Hakluyt's *Principal Navigations*, op. tit., vol. n, p. 438; also, *Notes upon Russia*, Hakluyt Society, first series, vol. 10, p. 95. The concluding quotation in this chapter is also from *Principal Navigations*, vol. n, pp. 258-9.

IV MUSHROOMS FOR MURDERERS

Exquisitum aliquid placebat, quod turbaret mentem et mortem differret.

TACITUS *on the death of Claudius, Annals, Book XII, Chap. 66.*

FOR murderers there is only one kind of mushroom worth considering: the amanita phalloides. Almost everyone who dies from mushrooms dies from it; and most of those who have eaten it have died from it. Even a small piece of the cap may kill a grown man. Specimens are easy to identify and easy to find in season - from August into October. Their poisonous virtue survives cooking, freezing, and drying. To speak more accurately, the deadly species are three in number, for we must add the amanita verna and the amanita virosa, but all three resemble each other so closely both in appearance and toxic properties that the murderer, whose ends after all are empirical, will disregard the distinctions as academic. He looks for white gills, veil (or ring), and volva, taking care not to be misled by any of the innocent amanitas, such as the citrina. On the autopsy table the victim shows pathological lesions of the viscera, but unlike arsenic, the pathologist cannot isolate the lethal agent, whose identity he must infer from the case history supplied by the attending physician, plus such evidence as can be assembled to show that the victim had eaten the lethal fungi. From the murderer's point of view, the deadly amanita suffers from one shortcoming : some victims, after days or weeks or even months of shattering illness, slowly recover and return to circulation. True, they are only frail replicas of their former selves, but they are alive and have foiled the murderer's coup. On the other hand, if the murderer also hates his victim, and if success attends his undertaking, his worst instincts and hopes will have been more than quenched by the slow progress and horrible suffering that attend the victim's downward course into the grave. The symptoms of poisoning by the deadly amanita are distinctive, dramatic, and terrifying.

To begin with, the lethal amanitas taste good - on this the abundant testimony of victims shows no dissenting voice. Nothing arouses suspicion as the greedy diner consumes his fateful dish; nor does he suspect anything for many hours thereafter. Indeed, the distinctive mark of this poison, its 'veritable signature' as Dr. Dujarric de la Riviere has aptly called it, is the period of absolute quiescence that follows the ingestion of the mushrooms, a period that never lasts less than

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six hours, and usually ten or twelve, sometimes twenty or even forty or more. The victim goes about his affairs blissfully unaware that the fingers of death already entwine him. Perhaps he speaks with relish of the mushrooms he has eaten, even returning to another dish of the same kind at the next meal. If they have been served to him intentionally, his murderer, standing by, eyes him with wicked and dissembled solicitude, alert for the inevitable moment. Of a sudden the victim is gripped by appalling abdominal distress, followed by vomiting and *diarrhoea fctida*. Neither emetics nor purgatives can help him now, for his system has absorbed the venom, during the long period of silent invasion. The initial seizure is followed by utter prostration, which in turn is succeeded by another paroxysm like the first, and this alternation continues, perhaps for many days, until the victim, his pulse fast and weak, succumbs, usually after a delirious phase. The appearance of the patient meanwhile is marked by what the physicians describe as the Hippocratic facies - eyes sunken and staring as though with anxiety or even terror, skin over the cheekbones taut and parched, nose pinched, temples hollow, ears leaden and cold, their lobes turned out, lips relaxed, the whole face livid - an appearance that is clear harbinger of imminent dissolution.

Our lugubrious, even sinister, approach to the toxic fungi presents the elementary facts that should be known to any detective story craftsman who resorts to mushroom poison as a device in the construction of a plot. The art of the detective story is a minor literary genre proliferated by the English-speaking peoples. Its leading exponents are often conscientious in their scientific research. But when they invoke mushroom poisoning, they seem incapable of artistic performance, as though the mycophobia peculiar to the Celtic and Anglo-Saxon races inhibited all inquiry into the dark recesses of the repellent subject. Mushrooms remain a mystery even to mystery writers.

Before examining the texts, we must mention two other kinds of toxic mushrooms. First and foremost there is the *amanita muscaria*, erroneously regarded by many laymen as *the* poisonous mushroom. Its evil reputation far outruns its deserts. It gives its name to 'muscarine', the agent that most physicians and even medical examiners in the English-speaking world regard as synonymous with mushroom poisoning. But the facts are that muscarine is seldom if ever fatal, that it is destroyed by cooking, and that it exists in the *amanita muscaria* only in traces, being much stronger in the *amanita pantherina*. The hallucinations and muscular exertions inspired by the *amanita muscaria*, followed by a period of stupor, are attributable to the presence of a wholly different compound, which resembles atropin. The victim (or beneficiary) of this intoxicating mushroom

PLATE VIII Jean-Henri
Fabre. *Boletus duriusculus* Kalchbr.



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is imbued with a new sense of dimensions, of physical powers, of miraculous mobility.

Of the remaining toxic mushrooms, there is a peculiar mystery about the *gyromitra esculenta*, a common species much eaten (as its name suggests) in Europe. Certain it is that at intervals cases occur where an individual dies from it. The explanation may not yet be surely known, but if the best opinion available today proves right, the *gyromitra esculenta* offers us a notable fungal peculiarity. It seems that everyone may eat this tasty mushroom with impunity for the first time. But there are rare individuals who, if they return to a mess of the same species shortly thereafter, and if the mushrooms are fresh rather than dried, suffer a dangerous and even fatal anaphylactic shock.

Dorothy L. Sayers with Robert Eustace in *The Documents in the Case* produced the supreme example in English of a mystery story based on fungal poisoning. An eccentric Englishman, George Harrison, made wild mushrooms his hobby (he was obviously eccentric), and in the end was found dead (as normal Englishmen would expect) in a lonely shack. The evidence indicated that he had recently eaten a mess of stewed mushrooms prepared by himself. The coroner after chemical analysis of the uneaten remains of the stew put the death down to accidental muscarine poisoning. The victim's son, Paul, was not satisfied, because he was certain his father, a careful man and excellent amateur mycologist, could never have confused the *amanita muscaria* with an edible species, and in the end he ran down the real culprit, a lover of Paul's step-mother, a villain named Robert Lathom, who in due course was proved to have introduced synthetic muscarine into the stock that had served for the mushroom stew. He was tried, convicted, and hanged. The story is well told, with delightful touches revealing the mycophobic habits of mind of the run of Englishmen. But it suffers from one defect: muscarine is destroyed by cooking and could not have caused the victim's death. True, the muscarine here involved is synthetic, but no evidence is produced to show that, in resistance to heat, the synthetic product differs from the natural. Furthermore, the toxicity of fresh muscarine is exaggerated: the chances were excellent that Harrison would survive an uncooked dose. Lathom should have used amanitine, not muscarine - the *amanita phalloides*, not the *amanita muscaria* - and for informed readers, his execution was a painful miscarriage of justice, a tragic sequel to an incompetent performance by Defense Counsel.

Miss Sayers and Mr. Eustace used, or misused, a genuine mushroom. More often English authors create fictional species, tailored to fit their plots. Ernest Bramah in *The Eyes of Max Carrados* tells a story entitled 'The Mystery of the

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Poisoned Dish of Mushrooms'. It hinges on the peculiar properties of a non-existent fungus on which he bestows a name unknown to mycology, the *amanita bhuroides*. (This name sounds like a misspelled derivative of Burrhus, a personage in attendance at the imperial court of Claudius and Nero.) It is so deadly that the victim expires within a half-hour of his seizure.

More remarkable than the *amanita bhuroides* is the *panseolus sherriffoides*, as we shall call the mushroom that the playwright R. C. Sherriff devises for his drama *Miss Mabel*. His plot is unhappy, for we are expected to sympathize with a kindly, somewhat demented heroine who poisons her wealthy and hateful sister, the widow Fletcher. The mycophile watches with astonishment as the author, by a very act of creation, invents his mushroom and clothes it with precisely those attributes that the plot requires. It appears in the spring: the daffodils are in bloom and Easter is yet to come. (In nature there are almost no mushrooms then.) It grows fast, progressing noticeably in the course of a night's rain. A cluster of nine serves as the lethal dose, but the playwright suggests that fewer would have sufficed. When cooked, these mushrooms smell like hot rubber, but the smell is successfully overlaid with onions and tomatoes. Most remarkable are the toxic properties. These fungi are a powerful narcotic and put the victim to sleep at once. The widow Fletcher departs this life without pain, her ugly, resentful face assuming in death 'a look of such peace and gentleness' that the audience is presumably reconciled to her hurried departure at the hands of her sister.

Yet another inventor of mushrooms is H. G. Wells, in his short story, *The Purple Pileus*. Here a mild-mannered, milktoast of a man named Coombes, lower middle-class, finds himself browbeaten by his wife and her odious friend, Clarence, to the point of desperation and suicide. He rushes from the house into the woods. He thinks of drowning himself, but suddenly notices all the varied mushrooms around his feet. A purple *pileus* catches his eye, "a peculiarly poisonous looking purple", slimy, shining, emitting a sour odor but not disgusting. Coombes breaks off a piece, and the creamy white of the inside changes in ten seconds to a yellowish-green color. He remembers that his father had described this very species to him, and they were the deadliest poison. He tastes the thing. It is pungent and he almost spits it out, but then it seems merely hot to the taste and full-flavored, a kind of German mustard with horse-radish. He swallows it. There ensues a curious tingling sensation in his finger-tips and toes. His pulse quickens. The blood in his ears sounds like a mill-race. He loses his balance and falls, and forgets everything. While he lies there unconscious, a peculiar transformation takes place in his personality, for after a while he wakes up feeling bright

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and cheerful, his complexion a livid white, his eyes large and bright, his pale lips drawn in a cheerless grin. The mild little man is now a lion, fit to be the master of his house. He goes home, and in a scene of violent retribution he imposes his will on his wife and that noisome friend of hers. He is so successful that the reformation in his household proves lasting, and the whole course of Coombes's life is changed for the better.

Coombes's violence might suggest that he ate the *amanita muscaria*, but Wells expressly distinguishes his purple *pileus* from that other species, "the red ones with white spots". Furthermore, the fly agaric produces a sleepy stupor after the spell of exhilaration, not before it. Wells, like Bramah and Sherriff, fills out the necessities of a given plot by inventing the needed mushroom, on which we here bestow the name of *boletus wellsoides*.

Have English authors ever invented flowers or bushes or trees with which to adorn the English countryside? It seems unlikely. Surrounded by mushrooms that they never truly see, they usually ignore them, and on the rare occasions when 'toadstools' are needed, they blithely misrepresent them, to make them serve an odious or exotic purpose.

With Wells and Sherriff and Bramah, we observe a peculiar aspect of the mycophobia of the English in its unconscious and spontaneous workings. Doubtless many other examples could be assembled, and we shall mention a few. But first let us note and celebrate one exception. Anne Parrish in her novel *The Perennial Bachelor* dispatches one of her characters by means of a dish of mushrooms. Unlike ah¹ the other writers about whom we speak, she shows herself thoroughly versed in the properties of the deadly *amanita*. The episode is only incidental to her plot, and this makes the accuracy of her details even more astounding. It is not as though she had worked hard on mushrooms in order to hang her story on them.

In December 1949 *Ellery Queen's Mystery Magazine* published a yarn by August Derleth in which the murderer killed his victim by substituting for morels some specimens of the *gyromitra esculenta* - a species that no villain bent on murder would ever rely on. In *Murder with Mushrooms*, Gordon Ashe has his victim die the same night that he dines on poisonous mushrooms - a tragic sequel that could not occur. In R. T. M. Scott's *Ann's Crime*, the victims inhale spores of the *amanita phalloides* that have been concealed in a cheese cloth inside a pillow, and forthwith they die, for no doctor, we are told, could save a person whose head had once touched that pillow! . . . Has there been a single writer of detective or mystery stories who has done justice to the genuine drama hidden in the properties peculiar to the *amanita phalloides*; The German

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author Gustav Meyrink in his *Bal Macabre* deals with mushroom intoxication. The story is drenched with a pathological atmosphere artfully contrived. There is much about mushrooms in the narrative, but the hallucinations that hang over the whole story seem to us to be best explained by the effects of alcohol, an alcoholic's nightmare about toxic mushrooms. Meyrink reveals no knowledge of fungal toxicology. The prolific American writer Percival Wilde in his *Tinsley's Bones*, published in 1942, introduces as a witness a knowledgeable female mycologist who seems to be addicted to mushrooms of the genus *panaeolus* as a substitute for cocktails, the author and his character displaying thereby an astonishing command of mushroomic esoterica; but mushrooms in this yarn were not the agent used for the murder.

The facts about lethal mushrooms are to be found, not in standard medical reference works, but in mycological publications. They are well summarized in John Ramsbottom's *A Handbook of the Larger British Fungi*, an indispensable reference book, which however still characterizes the *amanita mappa* (i. e., *citrina*) as poisonous, ignoring the work done by the French with this species. Good case histories in English of poisoning by the deadly *amanitas* appear in a Canadian Government publication, *Mushrooms and Toadstools*, by H. T. Gtissow and W. S. Odell. Certainly the best worked up case history in any language is the account of the tragic end of a Madame Boyer and her daughter Elodie, more than a century ago, retold with dramatic suspense and pathos by Camille Fauvel in his delightful little book, *Le Champignon aui tue*, published in Paris in 1926. The best single source of information about all the toxic mushrooms is, we believe, *Les Champignons Toxiques* (Paris, 1938), compiled jointly by Dr. R. Dujarric de la Riviere of the Pasteur Institute, and the mycologist Professor Roger Heim. Dr. Dujarric de la Riviere's promising efforts to produce an anti-toxin for the deadly *amanita* were interrupted by the second World War, and intravenous injections of glucose are the only readily accessible palliative available to physicians today.

Mycologists are prone to exaggerate the importance of mushroom poisonings in history. In their writings we repeatedly find a list of eminent persons who have died allegedly from eating poisonous mushrooms, a list that they copy from each other without verification. Sometimes we read that Euripides lost his wife and two daughters thus, an assertion unsupported by any ancient text, apparently based on a misreading of Athenaeus. We read that Pope Clement VII - he who is remembered chiefly for his troubles with Henry VIII of England - was a victim of poisonous mushrooms. This Pontiff died on September 25, 1534. The

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date falls in the season of the deadly amanita, but the records show that Clement's symptoms first manifested themselves many months earlier, on May 30, and the course of his fluctuating illness from that moment is well documented. We discover in the record no trace of the telltale stigmata. As his biographer Emmanuel Rodocanachi wisely observes, "In accordance with the custom of those times, people attributed his death to poison."¹

More remarkable still is the persistence in mycological writings of the assertion that Tsar Alexis of Russia or his widow died from mushrooms. Sometimes the texts name him, but more often her. As to the Tsar himself, the circumstances of his death are well known and are unrelated to fungi. His widow was an outstanding woman, the mother of Peter the Great, Natalija Naryshkina by name. She died on January 25, 1694 (Russian style), after an illness of five days. Neither contemporary records nor the historians of the period tell us the nature of her ailment. If mushrooms were the cause, they must have been dried or pickled specimens from the previous autumn. What has given rise to the tradition among mycologists that mushrooms brought about her end? We believe the source is to be found in a footnote that appears on page in of Jean-Jacques Paulet's classic *Traits, des Champignons*, published in Paris in 1793, reading as follows:

L'accident arrive a la veuve du czar Alexis, qui s'empoisonna avec des champignons qu'on avait gardes pour le careme, et rapporte par Miiller, est de notre siecle.

The accident that befell the widow of the Tsar Alexis, who was poisoned by mushrooms that had been set aside for Lent, as reported by Miiller, belongs to our century.

The Miiller to whom reference is made can only be Gerhard Friedrich Miiller, a prolific 18th century writer about Russia who died in 1783. But his numerous works available to us make no mention of the death of Natahja Naryshkina, and Paulet's footnote remains uncorroborated.

Finally there was the case of the German Emperor Charles VI, father of Maria Theresa of Austria. He had been worried and run down. "On the loth [of October] at night his complaint was increased by an indigestion, occasioned by a dish of mushrooms stewed in oil, of which he eat voraciously". So wrote that admirable man Archdeacon William Coxe, the same whom we quoted earlier, in his *History of the House of Austria*. Ten days later, on October 20, while the doctors were still arguing about the diagnosis, he surprised them by dying. The clinical details that Coxe supplies to us, including the patient's sudden death,

1. *Histoire de Rome: Les Pontificals d'Adrien VI et de Clement VII*, Librairie Hachette, Paris, 1933. See also Ludwig Pastor, *The History of the Popes*, London, 1910, vol. 10.

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are compatible with poisoning by the deadly amanita. There were no allegations that the poisoning, if such it was, was deliberate. If fungi were the agent, he is the one modern personage thus killed. His end precipitated war and Voltaire declared that "a pot of mushrooms changed the history of Europe".

So much for the famous men and women whose deaths have been attributed rightly or wrongly to mushrooms. This mortuary procession of alleged mushroomie victims would be incomplete if we did not here add the murders revealed by l'affaire Girard. In this case, the victims were persons of no consequence: their very names are forgotten. But the circumstances that brought them to their deaths are, for mycophiles and epicures of crime, both instructive and fascinating.

The standard mushroom manuals of France, like those of England, have always been saturated with mycophobic caution. By overstating the toxic dangers of various species, they have aimed at assuring the safety of their readers. But, through a strange conjuncture of events, that very bias once contributed to the disastrous end of a man who trusted his mushroom manual too much. This is the lesson to be learned from Faffaire Girard.

Girard's murders would doubtless have drawn wide attention if the press stories had not broken at the precise moment of the great spring offensive of 1918, the final year of the first World War. Girard was a Parisian, and his accomplices were his wife and his mistress. He murdered only his friends, after insuring their lives in his own favor. Poisons were his instrument, and among other poisons he used toadstools gathered for him in the forest of Rambouillet by an old hobo known as le pere Theo, whose testimony later was damning to the accused. From time to time Girard would order from Theo a mess of amanitas: they had to have white gills, veil, and volva - the stigmata of the deadly amanita, but also of the amanita mappa or citrina. Girard and his wife would serve these fungi to their victims at sumptuous dinners in their own apartment. Sometimes the guest went home and died, but on other occasions, doubtless to the surprise and discomfiture of the Girards, the intended victim suffered no ill effects whatever! Indeed, a number of them lived to give their evidence to the police.

In 1918 the standard mushroom manual of France was Paul Dumees's. Like all of the over-cautious manuals of that time, it condemned the amanita citrina as deadly. Girard had not thought it necessary, therefore, to distinguish the two amanitas when instructing old Theo about the mushrooms to gather. Thus it came about that when Theo brought in a mess of the amanita phalloides, the victim would enjoy a dish of tasty mushrooms and later die. But when Theo

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produced specimens of the innocent *amanita citrina*, the intended victim must have found them a little unpleasant to the taste, and that was the end of the matter. For the deadly *amanita* makes a delectable dish, whereas its relative the innocent *citrina* scarcely rises palate-wise to the mediocre level.

Thus it may be said that Girard was deceived and misled by Dumees's over-cautious manual, with the result that some of his friends and intended victims unwittingly survived his honest efforts to do them in, and he in turn was fatally entangled in the law's toils. Now that the French manuals have improved, Girard's mistake is unlikely to be repeated. Had Girard hailed from Serignan, Henri Fabre's village in the Provence, he would have known from childhood not to rely on Dumees, for these peasants need no manuals.

Girard's crimes would have been forgotten, had it not happened that Camille Fauvel, that prodigious mycophile, was a *Commissaire de Police* in Paris at the time, and though he was not handling the Girard case, having lately been charged with the more famous and important but less interesting Mata Hari dossier, he followed it with expert attention, even interviewing Girard in Fresnes prison after the conviction, in the interests of mycological lore. Fauvel published an admirable narrative of the affair many years later, in the *Supplement* to the issues of June and August, 1936, of the *Revue de Mycologie*, and we have drawn our facts from his account. It should be added that Girard died in his prison bed of tuberculosis a few days after he was interviewed, never having admitted his guilt nor that he had relied on the unsound advice of Dumees. But Fauvel's inference is based upon evidence that leaves little room for doubt.

All that we have set forth in this chapter up to now - the description of the singular properties of lethal mushrooms, the inadequacy of mystery writers when they deal with this theme, our comments on alleged poisonings of eminent personages and the mushroomic murders of unimportant folk - has had only one purpose: to equip the reader for a reconsideration of the death of the Emperor Claudius in A.D. 54. On that occasion, for once in the course of recorded history, the whole of a great Empire and the known world swung on a dish of mushrooms. The accounts in the ancient writings of that famous event are an old, old story, familiar to all students of antiquity. Those texts have been parsed by students, dissected by historians, pondered by moralists for close on to twenty centuries. It would seem that by now every conceivable interpretation must have been hit upon, and the resources of scholarly inquiry exhausted. Indeed, the signs of exhaustion are not lacking: in our own generation Guglielmo Ferrero in his *The Women of the Ccesars* has not only struggled to exonerate

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Agrippina of the dreadful charge laid at her door, but to portray her as a noble Roman matron!

It would be surprising if at this late date fresh evidence shedding light on Claudius's death were discovered, and yet this is what we think we have done. We rely solely on the same worn texts, and we entrust our fate to the verdict of scholars far more learned than we. Perhaps those old texts have a message to deliver to us that can be discerned only by one who is a lover of mushrooms, a physician, and above all an amateur of venomy - amateur in the sense of a critical but passive observer of those who have practiced that subtle art.

Let us recall the background of the crime. Claudius succeeded Caligula as emperor in the year 41, at the age of 51. By his third wife, Messalina, he had had a son, Britannicus, born the year before his accession. After executing Messalina for adultery, he married his niece Agrippina, who by a previous marriage had a son of her own, three years senior to Britannicus; and her son was destined to worldly immortality as the Emperor Nero. Indeed, Agrippina's motive in murdering her husband was to assure the succession to Nero, in which endeavor success crowned her efforts. Claudius at the time of his death was said to be favoring Britannicus, and it was even rumored that he had bequeathed the Empire to Britannicus in a will that Agrippina destroyed.

The young man who was to be known as Nero had as his tutor from A.D. 50 on the famous Seneca, and at the time of the crime Seneca was an intimate of the imperial circle, privy to all that went on. He could have left us an eye-witness account of what happened, but instead he veils his remarks in satire - a prudent evasion of one who undoubtedly knew too much. Three of the ancient historians have given us accounts of the event. Tacitus, who was probably born in the year after Claudius's death, wrote his narrative about sixty years later; Suetonius's version came a few years after that; and Dio Cassius told the story again almost two centuries after the event. These three secondary sources differ among themselves in details, which gives to their agreement on essentials a stamp of verisimilitude. In the main they were not copying each other, and they probably had the important facts right.

Claudius was exceedingly fond of mushrooms (*boleti*), and a plausible tradition has it that his favorite kind was what we know today as the *amanita caesarea*. The dish of mushrooms that he ate on the fateful day consisted of *poisoned*, not poisonous, mushrooms. On this all three of the ancient historians agree, in different words. None identifies the poison that was used, but they are abundantly clear that poison was added to the Emperor's favorite dish. Here is Tacitus, Book XII, Chap. Ixvii of the *Annals* in the Loeb edition:

PLATE IX

Jean-Henri Fabre. Arnanita csesarea Fr. ex Scop.

French: *orange*; Italian: *ovolo*.



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Adeoque cuncta mox pernotuere, ut temporum illorum scriptores prodiderint infusum delectabili cibo boleto venenum.

So notorious, later, were the whole proceedings that authors of the period have recorded that the poison was sprinkled on an exceptionally fine mushroom.

Suetonius gives alternative versions, in Book V, Chap, xlv, in the Loeb edition:

Et veneno quidem occisum convenit; ubi autem et per quem dato, discrepat. Quidam tradunt epulanti in arce cum sacerdotibus per Halotum spadonem prsegustatorem; alii domestico convivio per ipsam Agrippinam, quae boletum medicatum avidissimo ciborum talium optulerat.

That Claudius was poisoned is the general belief, but when it was done and by whom is disputed. Some say that it was his taster, the eunuch Halotus, as he was banqueting on the Citadel with the priests; others that at a family dinner Agrippina served the drug to him with her own hand in mushrooms, a dish of which he was extravagantly fond.

Suetonius places the poisoned mushrooms only in his second version, but mushrooms could have been the vehicle that Halotus used too, and this may be implied. Dio Cassius comes down to us in a Greek summary. In Book LXI he accuses Agrippina of having put the poison into "one of the vegetables called mushrooms", using for mushroom the Greek word *μύκης*. A few pages later Dio Cassius refers again to the same poison when he says:

Agrippina was ever ready to attempt the most daring undertakings; for example, she caused the death of Marcus Junius Silanus, sending him some of the poison with which she had treacherously murdered her husband.

What poison did Agrippina use? We think the answer is clear. She turned for advice and aid to a woman named Locusta, an experienced artist in the preparation of poisons, as Tacitus tells us; a famous dealer in poisons, as Dio Cassius puts it. According to Tacitus, the instructions of the Empress to Locusta were narrowly defined. The poison was not to be sudden and instantaneous in its operation, lest the desperate achievement should be discovered. On the other hand, if the effect were slow and consuming, Claudius as his end approached might discover the treachery and take steps to thwart the perpetrators in their ultimate purposes. (He might, that is to say, proclaim Britannicus as his heir.) Something subtle was needed, which would take time but also deprive the victim of his faculties. As Tacitus goes on to say, by Locusta's skill the desired poison was prepared. This passage in the *Annals* of Tacitus being a crux in our argument, we give it in full:

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Turn Agrippina sceleris olim certa et oblatas occasionis propera nee ministrorum egens, de genere veneni consultavit, ne repentino et praecipiti facinus proderetur; si lentum et tabidum delegisset, ne admotus supremis Claudius et dolo intellecto ad amorem filii rediret. Exquisitum aliquid placebat, quod turbaret mentem et mortem differret.

It was then that Agrippina, long since bent upon the impious deed, and eagerly seizing the present occasion, well furnished too as she was with wicked agents, deliberated upon the nature of the poison she would use, whether, "if it were sudden and instantaneous in its operation, the desperate achievement would not be brought to light: if she chose materials slow and consuming in their operation, whether Claudius, when his end approached, and perhaps having discovered the treachery, would not resume his affection for his son." Something of a subtle nature was therefore resolved upon, "such as would disorder his brain and require time to kill." [Oxford translation, *Annals*, Book xn, Chap. 66]

There was only one poison available to the ancients that would fulfill Agrippina's requirements - the poison of the deadly anianita. The victim would not give away the game by any abnormal indisposition at the meal, but when the seizure came, he would be so severely stricken that thereafter he would no longer be in command of his own affairs. For one familiar with the properties of the amanita phalloides the text in Tacitus seems transparently clear. But for others than mycophiles there might remain a doubt: is it legitimate for us to infer that Locusta knew the deadly amanita and its secret virtue to which even now, after nineteen centuries, few are privy?

This question troubled and challenged us, not because we were uncertain but because it would be hard to carry conviction with an uninitiated public. Once more we reviewed all the principal sources, all the stray allusions in the classical writers. We concentrated especially on Seneca. After all, he was a witness whose testimony would have been competent in our own courts of justice; he was articulate, and had he not carried the secret etched sharp in his memory from that fateful October day in A.D. 54 until his death eleven years later? Somewhere, if only by inadvertence, he must have talked, and perhaps his revealing words had survived, their esoteric meaning hitherto unperceived. We embarked on a reading of ah¹ his extant writings. We began with his later works, composed after the death of the Emperor, and tried to orient each sentence toward that event. Suddenly one day we came upon the tell-tale phrase: it leaped at us from the page, fairly shouting at us. Yes, whether with sly intention or by inadvertence, Seneca had blurted out the fateful secret, imparting it to all knowing readers. And before us not a single commentator had ever caught the inner meaning of the plain words.

We refer the reader to Letter xcv that the old Stoic wrote to his friend Luci-

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lius nine or ten years after the death of the Emperor and one or two years before he took his own life on Nero's orders. In it he describes and deplors the excesses of the Roman upper class. He refers to the late Emperor's gluttony:

Di boni, quantum hominum unus venter exercet! Quid 2 Tu illos boletos, voluptarium venenum, nihil occulti operis iudicas facere, etiam si prsesentanei non fuerunt.

Good gods! What a number of men does one belly employ! But can you think those mushrooms (a tasty poison) do not secretly and gradually operate, though no bad effect is immediately perceived from them ? [Loeb translation]

Here is proof that Seneca knew the *amanita phalloides*. The period of silent invasion, that *veritable signature* of the lethal mushroom, was familiar to him, and he even took pains to mention how tasty the wicked mushroom was! How much guilty knowledge packed into a few words! Read in conjunction with the Empress Agrippina's instructions to Locusta, we believe it clinches our case. The poison in the dish of Caesar's *amanitas* was the poison of the deadly *amanita*. Two of our authors, Suetonius and Tacitus, give us grounds for supposing that the administration of the poison was entrusted to the eunuch Halotus, whose office it was to taste the Emperor's food before serving it to him. Tacitus says that Halotus poured the poison into the dish of mushrooms. It would have been easy for Locusta to prepare a sauce from the deadly specimens, and by enlisting the aid of Halotus, no suspicion would be aroused by the failure to serve it to others at the feast. However, this is a detail, important at the time to the participants of course, but secondary to the primary fact that the ancient writers are telling us exactly how Locusta handled the assignment with which Agrippina charged her. We believe that the secret of those two fearless and wicked women is withheld from us no longer. (For Latinists and mycologists it is interesting to note that Seneca uses the word *boletus* for the deadly *amanita*: it was clearly the term for all *amanitas*, not merely the *amanita cassarea*.)

We rest our case on the knowledge shown by Seneca and the quoted passage from Tacitus, taken together. But there is additional circumstantial evidence compatible with our theory. The crime was committed on October 12 - in the season when the deadly *amanita* could be easily found around Rome. On the morrow after Claudius had eaten the mushrooms and while he was yet alive, comedians were introduced into his presence to solace and delight him, as Suetonius says. Since any such kind intention was foreign to Agrippina's nature, and *a fortiori* at the dreadful moment that we are considering, we may assume that her purpose was different: the comic actors were to bear witness in the public market-place that the Emperor had not been killed but was in truth desperately

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ill, and the Hippocratic facies that we know he must have manifested gave them full warranty for such a report. Immediately after Claudius's death, he was proclaimed a god—a posthumous honor for emperors to which Romans were accustomed. Afterwards, when Nero was in secure possession of his imperial office, he was present at a certain banquet where mushrooms were brought in, and someone remarked that they were the gods' food, *cibus deorum*. To this Nero is said to have replied: "True enough: my father was made a god by eating a mushroom." (This story is told by Suetonius, Dio Cassius, and Petrus Patricius.) Nero's remark is more apt if he was referring to the deadly amanita, and not merely to a dish of edible mushrooms that had been poisoned; and Nero was in a position to know.

In spite of Locusta's artistry, we know that her bold stroke was botched, and this leads us to the second part of the crime. The time schedule alone tells us that something went awry. Claudius sat down to his fatal banquet at about 2.30 p.m. on October 12. At or shortly after noon the next day he was dead. The lethal amanitas do not kill so quickly. We do not know at what stage in the lengthy banquet he ate his mushrooms, but probably not at the beginning. His seizure could not have taken place before 9 p.m., and probably not before midnight or later, which would mean that his agony lasted only twelve hours! On its face this is impossible. We pointed out earlier that, for a murderer, the amanita phalloides labors under one defect: occasionally a victim recovers. Agrippina could not afford this risk, and even if we had no evidence to support our theory, we might assume that she and Locusta, as their imperial patient lay at their mercy, resorted to direct methods to dispatch him. Fortunately, our texts come to our help.

"The victim of the plot," says Dio Cassius, "was carried from the banquet apparently quite overcome by strong drink, a thing that had happened many times before." Suetonius's version is hesitant: "Of those accidents also which ensued hereupon [after eating the mushrooms] the report is variable. Some say that straight upon the receipt of the poison he became speechless, and continuing all night in dolorous torments died a little before day. Others affirm that at first he fell asleep, and afterwards, as the meat flowed and floated aloft, vomited all up." (If it is true that in his usual drunken stupor he threw up, this was enough to send the two women into a panic, for he might have rid himself of the fungal poison!) Tacitus is explicit: "Agrippina therefore became dismayed; but as her life was at stake, she thought little of the odium of her present proceedings, and called in the aid of Xenophon the physician, whom she had already implicated in her guilty purposes. It is believed that he, as if he purposed to assist Claudius

PLATE X

Jean-Henri Fabre. *Amanita phalloides* Fr.

French: *orange cigue verte*.

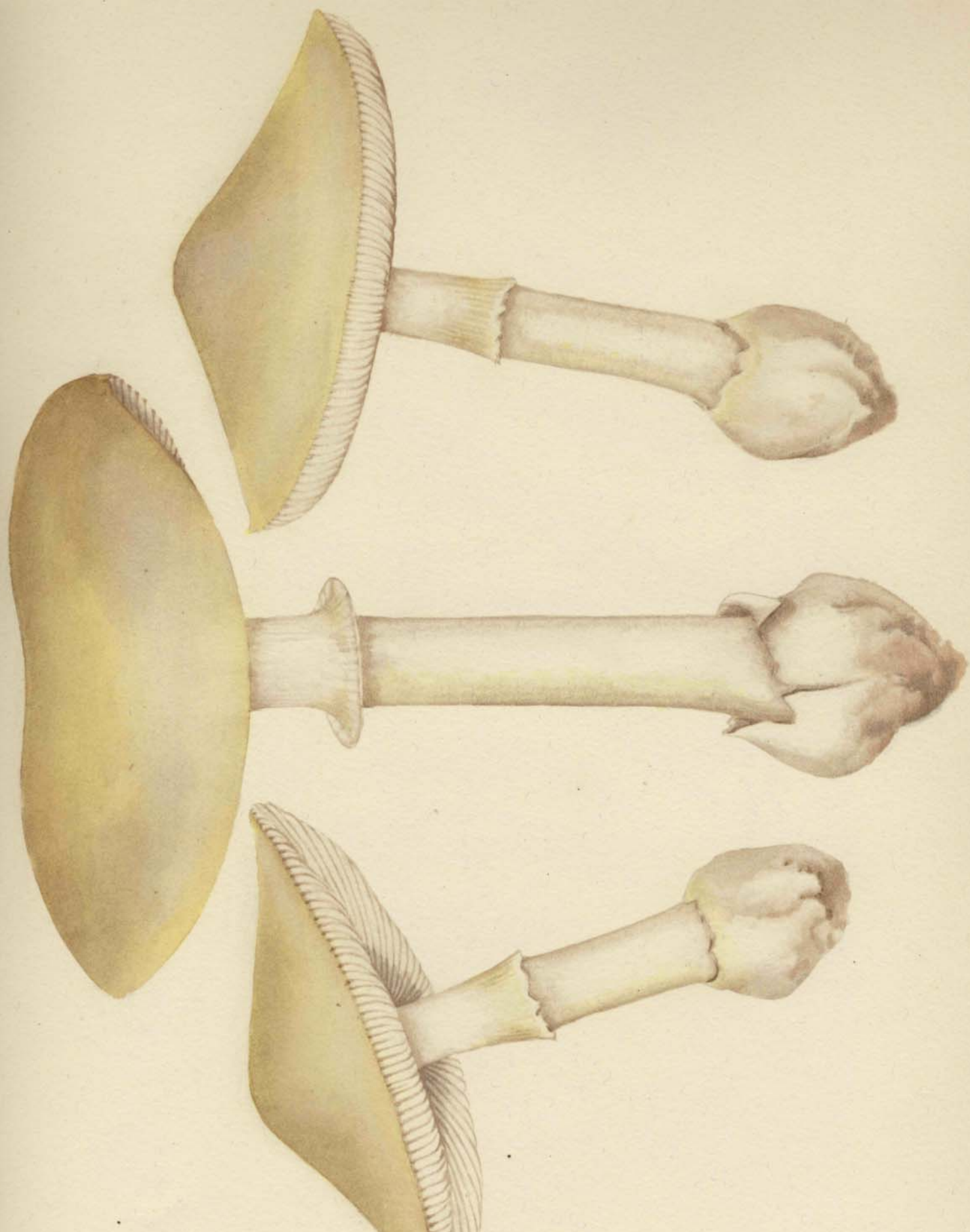
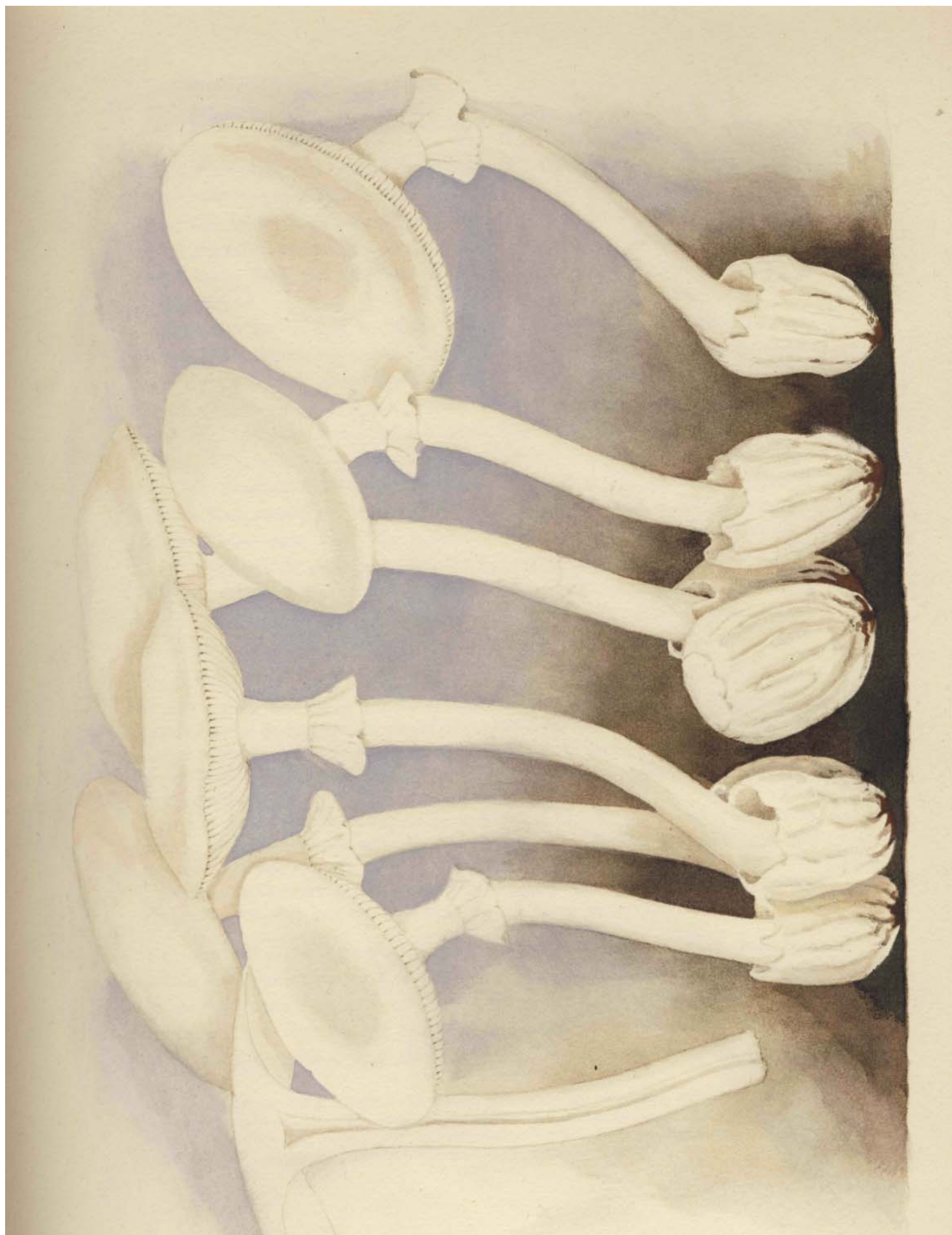


PLATE XI

Jean-Henri Fabre. *Danse Macabre*. *Amanita verna* Fr. ex Bull.
French: *orange cigue blanche*.



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in his efforts to vomit, put down his throat a feather besmeared with deadly poison; not unaware that in desperate villainies the attempt without the deed is perilous, while to insure the reward they must be done effectually at once." There was thus a second poisoning, with the Greek physician Xenophon replacing Locusta. Suetonius says that, according to one report, the second poisoning was by clyster.

What was that poison to which Xenophon had hurried recourse? Robert Graves in private correspondence offers us an answer that fits the circumstances perfectly. Not long after Claudius's death, Seneca published a satire on the emperor's deification to which he gave the title of *Apocolocyntosis*, an artificial word telescoping *apotheosis* and *colocynthis*. The colocynth (as we call this gourd in English) is far from being a pumpkin, and the traditional translation of this title, the *Pumpkinification* of Claudius, is indeed as insipid as the classical scholars have considered it. But if Mr. Graves is right, and we believe that he is, the scholars have missed the point.

The colocynth is not edible. It is exceedingly bitter, whence its name, 'the bitter gourd'. It is not native to Italy, but was imported from the arid areas of the Near East, notably Palestine. This is the famous gourd that responded to Elisha's miraculous powers in II Kings, Chapter 4, verses 38 to 41 :

And Elisha came againe to Gilgal, and there was a dearth in the land, and the sonnes of the Prophets were sitting before him: and hee said unto his seruant, Set on the great pot, and seethe pottage for the sonnes of the Prophets,

And one went out into the field to gather herbes, and found a wild vine, and gathered thereof wilde gourds his lap full, and came and shred them into the pot of pottage: for they knew them not.

So they poured out for the men to eat: and it came to passe as they were eating of the pottage, that they cried out, and said, O thou man of God, there is death in the pot. And they could not eate thereof.

But he said, Then bring meale. And he cast it into the pot: And he said, poure out for the people, that they may eat. And there was no harme in the pot.

In minimal doses the colocynth is a violent purgative; in larger doses it is lethal. It happens that we know the history of this drug in surprising detail. In the first century of the Christian era the upper classes of Rome were much concerned with their health: hypochondriasis was rampant, and miracle drugs were being discovered one after the other.¹ Early in the reign of Claudius

i. Some of the drugs used in imperial Rome have survived in use until recent times. One such is the agaric, and another is colocynth, this latter having been the base for 'general issue' purgative pills in the British army in the first world war. We too, in the mid-20th century, are witnessing a spate of miraculous pharmaceutical discoveries. Will a single one of them be remembered in A.D. 3850?

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an apothecary named Scribonius Largus enjoyed immense vogue; possibly he attended Messalina, the mother of Britannicus and predecessor of Agrippina as wife of the Emperor. In the middle 40's of that century he assembled and published a collection of prescriptions that was destined to become famous, and among them was a formula, or *hiera*, that he had discovered among the papers of a deceased colleague, Paccius Antiochus. One of its ingredients was colocynth, a novel drug that thereupon quickly became the rage in the upper crust of Rome, a few years before the events that we are discussing. In the desperate extremity of that turbulent night of October 12, A.D. 54, when the Greek physician Xenophon was called in consultation and permitted himself to become a *particeps criminis*, it was natural for him to come to the rescue of Locusta and Agrippina by dispatching Claudius with an overdose of colocynth, administered by mouth or clyster or both. This explains the name that Seneca gave to his satire. Claudius's last words, as attributed to him by Seneca, were *Vce me! puto, concacavi me*, which would be apt for either colocynth or the deadly amanita.¹

If then our reading of the texts is right, Claudius was done in with a one-two knock-out, first a dose of the deadly amanita, and then a dose of colocynth. As a pun on 'apotheosis', the name of Seneca's satire *Apocolocyntosis* at last becomes clothed with wit: the deification of an emperor is reduced to a repulsive scatological metamorphosis. When, later, Agrippina did away with Marcus Junius Silanus (as Dio Cassius tells us), it was the deadly amanita that she used, and not colocynth; for colocynth proclaims its presence by its bitterness, and an intended victim would spew it out forthwith.

At noon on October 13 the gates of the imperial palace in Rome swung open, and Nero, then a youth of 17, emerged and presented himself as the new emperor to the army detachment that was on guard there. The Emperor Claudius was dead, or *in extremis*. There could have been no reason, only danger, in prolonging the interval between the death of the old emperor and the assumption of authority by the new.

And so we bring our review of Claudius's death to an end. The three ancient historians who tell us the story were not clinicians. Their accounts, differing sharply in the unessential details, give us a surprisingly clear and consistent overall clinical picture. This is circumstantial evidence of virtually conclusive weight that they were telling the truth. They could not severally have invented a combination of symptoms, and a sequence of events, that two thousand years later would speak for themselves.

i. For information concerning the early use of colocynth in Rome, the best source is Wilhelm Schonack's scholarly study *Die Rezeptsammlung des Scribonius Largus*, published in Jena in 1912.

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Our sources say that a curtain of secrecy had shrouded the palace during the illness of Claudius. It is tempting to try to reconstruct the scenes in the imperial palace before and during the crime. The plot had been laid earlier in whispered conversations between Agrippina and Locusta in some safe spot to which Locusta had been furtively summoned. How stirred Locusta must have been by her great assignment: the world offered none bigger for a person in her line of work. Locusta, if she possessed imagination as well as art, may well have leaped with excitement at the thought that this deed, artfully accomplished, would bring her immortality; and indeed it has done so. But during that fateful night the tension must have been unbearable. Had their victim foiled their efforts prematurely from drunkenness, by vomiting before the poisonous amanita had done its damage? Might he survive and resume the exercise of his imperial functions? Was Locusta vexed, her professional pride hurt, when Xenophon was called in, or was she relieved? With what anxious eyes Locusta and Agrippina must have searched each other's ill-lighted faces as the hours crept on! But in any case, with his enemies in command at his bedside, Claudius stood no chance.

The triumph of Agrippina and her fellow conspirators bestowed on them all power. They may well have gloated in their success, and were so situated that they could talk with a large measure of impunity. In the writings of Seneca and the three historians, one seems to hear echoes of veiled boasting, as though Locusta and Agrippina were dying to tell just how they had contrived their ends. Their words were veiled, in homage to virtue, but thinly, and lend themselves to understanding by the initiated, if only across a chasm of nineteen centuries.

V

THE RIDDLE OF THE TOADSTOOL AND OTHER SECRETS MUSHROOMIC

[Fungi] quod comesti frequenter oppilant vias spirituum
animalium in capite, et inducunt insaniam.

ALBERTUS MAGNUS, *De vegetabilibus*.

TOADSTOOL is a strange term, and doubly strange because no one in our word-conscious times seems to have paused to look at it. Toads do not sit on wild fungi, nor under nor around them; neither do they eat them. Indeed toads and frogs have no direct physical or biological link with toadstools. Our word, with roots deep in our folkways, is not, in any way obvious to us, a distillate of man's observation of nature. The Oxford Dictionary says it is a 'fanciful' name, and thus sidesteps a riddle. Not infrequently commercial artists and fanciful illustrators of children's books represent toads with toadstools, and occasionally even photographers contrive by trickery¹ to juxtapose the two. In every such instance they draw their inspiration from the word, not from nature.

Why 'toadstool'; This question sank its spurs in us some years ago and pricked us onwards, until soon we found ourselves launched on a pilgrimage to far-off places and remote times, to the frontiers of men's knowledge and beyond, where we sought to discern vistas behind the beginnings of recorded history. Through the worn faces of familiar words we re-discovered things that civilized men had forgotten. We may have found, in the end, successive answers to our toadstool riddle, layer beneath layer, as well as answers to a number of other fungal mysteries that reared their challenging heads along our path. The measure of our success will be the cogency of certain problems of larger scope that seem to emerge from our argument, problems that we gladly bequeath to others.

I. Thus on Nov. 8, 1930, *The Times* published a sequence of six photographs showing a toad as it approached a boletus, clambered up on the cap, and finally sat there. Dr. John Ramsbottom reprinted four of these in his *Mushrooms & Toadstools*, Collins, London, 1953, facing p. 287. The photographer, Neville Kingston, died in the 1930's. *The Times* kindly supplied us with his original series of seven photographs, and by internal evidence it is clear that they do not record a spontaneous happening in nature. Innocent and playful in intent, and delightful as one more example of man's undying loyalty to cherished error, these photographs must be docketed as nature fakes. Toads when slightly chilled become lethargic and lend themselves to posing, a secret undoubtedly known to Kingston.

THE VENOMOUS TOAD

He ordenit hir to hing, roist, and drop ane taid, and
to lay the droppis of the taid in his hienes [=Highness']
way, for his hienes destructioun.

Testimony in trial of Barbara Napier, May 8, 1591.

The sinister mark of the toad is not confined to the English fungal vocabulary. You will find it in Norwegian and Danish, though not in Swedish; in Low German, Dutch, and Frisian; in Breton, Welsh, and Irish. The romance languages know it not, except for traces in French. Nor does it survive in standard High German, though it lingers on in High German dialects. Thus the citadel of the 'toadstool' is in the ring of peoples who dwell around the shores of the North Sea, a gigantic and evil Fairy Ring, as it were, embracing fringes of the Teutonic peoples and the surviving Celts, along with the French. (The Bretons, let it be remembered, emigrated from Britain to their present home across the Channel in the fifth and sixth centuries after Christ, and are thus remote heirs, folkwise, of old Britain.)

Not all of these peoples use the figure of the toad's stool. The Norwegians and Danes speak of the toad's hat; the Low Germans, of the frog's stool; the Dutch say toad's stool; and the Frisians refer to an old fungus as a toad's hide. The Irish term is the frog's pouch; the Welsh, toad's cheese; the Bretons, toad's cap, but by the addition of a single initial sibilant, their term becomes toad's stool, and this is a recognized variant in their language. Here are the words in these tongues: in Norwegian and Danish, *paddehat*; in Low German, *poggenstohl*; in Dutch, *paddestoel*; in Frisian, *poddehud*; in Irish, *bolg losgainn*, with *bolg* meaning pouch; in Welsh, *caws llyffant*, with *caws* meaning cheese; in Breton, *kabell tousec*, and also *skabell tousec*. The Pennsylvania Dutch speak a dialect of High German that comes down from the language of the Palatinate in the 18th century, and in Pennsylvania Dutch we find both toad's stool and toad's foot: *grottestuhl* and *grottefuss*. We know that toad's bread, *pain de crapault*, was used for wild fungi in 16th century France, and this same expression has been reported in modern times in the Calvados region of Normandy. The *amanita muscaria*, with its red cap flecked by warts, is called *crapaudin* in some parts of France and this word in the form *grapaoudin* has been reported as far south as the Herault, on the Mediterranean.¹

I. Our source for the French mushroom vocabulary is *Flare Populaire ou Histoire Naturelle des Plantes dans leurs Rapports avec la Linguistique et le Folklore*, by Eugene Rolland, Paris, 1914; vol. XI, pp. 129 ff.

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All these words, in varying degrees, exhale a bad odor. They designate wild fungi that the speaker considers, rightly or wrongly, inedible and dangerous. The English toadstool, freighted with evil, is typical of the class. In the dialects of England there are numerous variants, and these are interesting because they echo the figures of speech that are current in our list of foreign words. Thus we find toadcheese or taddecheese, toad's bread, toad's cap or toadskep, and toad's meat. For the toad itself there is an ancient variant, pad or paddock, which gives us paddock-stool and puddock-stool. This 'pad' is the same word for toad that the Dutch and Frisians, the Norwegians and Danes, use. This is the witches' word in the opening scene of *Macbeth*:

Padock calls anon: faire is foule, and foule is faire,
Hover through the fogge and filthie ayre.

Here in our argument we interrupt its course for a necessary diversion.

Today civilized men have a kindly feeling for the toad. Lewis Carroll and Kenneth Grahame have planted the seeds of their benign influence in the minds of successive generations of well brought up English-speaking children. The Victorians were inclined to foster sympathy for the whole animal world. (Was this because the industrial revolution released increasing numbers of men from slavery to the soil, from intimate conflict with cantankerous nature?) As for the toad, there has been an additional influence: men of science have undertaken to show that it is the farmer's friend.

Far different was the repute of the toad in times past. There was no other member of the animal kingdom that inspired such revulsion and fear. Chaucer spoke of the 'foule tode', and Spenser of the loathly and venomous toad. 'A pad in the straw' was what our ancestors said when they meant 'a nigger in the woodpile'. (Now that this last phrase is banned in polite society and perhaps vanishing, why not revive the earlier expression?) Shakespere reveled in the toad as a potent term of abuse. In *Richard III* the toad is a recurring theme, as is fitting for a play about a king described as:

That bottel'd Spider, that foule bunch-back'd Toad.

Among all of Shakespere's many references to the toad, there is not one that is neutral, much less friendly. Edgar in *King Lear* denounces Edmund as 'a most toad-spotted traitor'; and the witches in *Macbeth*, when they concoct their hellish brew, give to the toad pride of place in the cauldron:

Toad, that under cold stone Days
and nights hast thirty-one

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Swelter'd venom sleeping got, Boil
thou first i' the charmed pot.

Not only were toads venomous: to the medieval mind they were also a symbol of lechery, as were warts and moles, with which toads were supposed to be covered. We shall return to this matter of lechery; for the present we only direct the reader's attention to the visual use of the toad in this sense by Hieronymus Bosch, in his *Seven Deadly Sins*, of which we reproduce the pertinent detail in Plate xm.

The evil repute of the toad is not yet dead. There are English circles where 'Toad!' flung in anger would be a fighting insult now. The derivative 'toady' brings to mind the sycophantic and hypocritical squat of the creature, with its upturned watchful eyes. The bad name of the toad survives among untutored countryfolk in England and the United States, where farmers cling to the belief that the spittle of toads is poisonous, and that warts will grow on the skin where a toad has touched. French peasants down to recent times, and perhaps even now, put toads to death by methods shocking for their cruelty, methods that reveal an ingenuity in torture ordinarily reserved by man for his fellow-men.¹ The venom-spitting toad in all his horrible lineaments was painted for us by Hieronymus Bosch in a detail of his *Judgment Day*. Summoned from his grave, a nude Cardinal (his worldly office proclaimed by his hat) is floating away to everlasting damnation as a squatting toad directs a shaft of his deadly saliva at the passing corpse.

Toads were closely linked with witchcraft. In France all witches harbored toads as their familiars, and this was common in England and Scotland too. In 1591, trials held in North Berwick elicited from the members of certain witches' covens clear testimony that they had tried to murder King James VI of Scotland, and that one of their plans had been to drop toad's venom on his head or body, and to smear his small clothes with it.² Presumably the poison was to invade the person of the king through abrasions of the skin, which in those days of absent hygiene and parasitic insects were taken for granted. From the contemporary records of this case we learn that 'to drop a toad' was the idiom used at that time for the milking of a toad's venom - a meaning of the verb 'to drop' that the Oxford Dictionary fails to record - and in one of the

1. See *Le Folklore de France*, by Paul Sebillot, vol. in, *La Faune et la Flore*, Paris, 1906; pp. 280 ff.

2. See *The Witch-cult in Western Europe*, by Margaret Alice Murray, Clarendon Press, Oxford, 1921, p. 53; also *Life in Shakespeare's England*, an anthology compiled by John Dover Wilson, published in 1911 by the Cambridge University Press and reprinted repeatedly since then. For additional references to toad poisoning in England, see Miss Murray's latest work, *The Divine King in England*, 1954, Faber & Faber, London, p. 40; also p. 61.

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accounts of the trial we even learn the details of the method used. Here is a paraphrase of the testimony of Agnis Tompson, a defendant, as published in *Newes from Scotland Declaring the Damnable Lif and death of Dr. Fian*, printed in London for William Wright in 1591:

She confessed that she took a blacke Toade, and did hang the same up by the heeles, three dales, and collected and gathered the venome as it dropped and fell from it in an Oister shell, and kept the same venome close couered, untill she should obtaine any parte or peece of foule [soiled] linnen cloth, that had appertained to the Kings Maiestie, as shirt, handkercher, napkin or any other thing which she practised to obtaine by meanes of one John Kers, who being attendant in his Maiesties Chamber, desired him for olde acquaintance betweene them, to helpe her to one or a peece of such a cloth as is aforesaide, which thing the said John Kers denied to helpe her too, saying he could not help her too it.

And the said Agnis Tompson by her depositions since her apprehension saith, that if she had obtained any one peece of linnen cloth which the King had worne and fouled, she had bewitched him to death, and put him to such extraordinary paines, as if he had beene lying upon sharp thornes and endes of Needles.

It comes as a shock to modern man to learn that his ancestors considered the common toad venomous as the adder. It comes as a double shock to him when he learns that these ancestors were probably right, and that on this subject they were better informed than he is. The toad has no fangs and cannot bite. But on his coarse skin are scattered numerous glands that look like warts or pustules; and when the creature is frightened or in pain, these glands exude a milky fluid, which is powerfully toxic. Hidden inside the skin, invisible to the naked eye, is another set of glands, which lubricate the skin with a slimy mucoid secretion, easily perceived by the human hand but perhaps not poisonous. The witches who kept toads as their familiars knew the wicked properties of the toad's milky secretion, and it is a fair surmise that the singular tortures reserved for toads by some countryfolk were originally devised to milk the toads of their deadly drops. The venom of the toad cannot penetrate healthy human skin, but takes hold of any mucous membrane, and if swallowed or absorbed through an abrasion of the skin, might well be lethal. Among those who work with toads, it is common knowledge that their secretions, if accidentally brought into contact with the eyelid, cause an acute burning irritation. (The inflamed swelling of the sebaceous gland at the margin of the eyelid, commonly known in English as a sty, is called in vulgar Dutch *paddescheet*, 'toad's excrement', even when no toad is involved.)

In the 15th century Chronicle of St. Albans there is an account of the death of King John of England that possesses extraordinary interest both for its own sake and for the role played in it by a toad. History relates that the King in

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the year 1216 was making his way north with his retinue, dogged by his enemies and ill. In crossing the Wash he lost much of his baggage train, to his great sorrow, and after lying at the Cistercian monastery at Swineshead, he progressed some distance beyond to the castle at Newark-on-Trent, where he died on October 19, on "the morrow after St. Luke's Day". The Chronicle of St. Albans says that his death was precipitated by a draught of poisoned ale served to him at Swineshead. Though perhaps the scribe was only giving currency to a malicious canard, this scarcely affects the interest of his narrative for us, because he was writing what he and his contemporary readers were ready to accept, and the role in the affair that he assigns to a toad conformed to common beliefs and probably to esoteric knowledge. The provocation that the scribe reports for the alleged regicide is curious. The King swore a great oath, says the chronicler, that if he was spared another six months, the loaf of bread then worth a ha'penny would be selling at 20 shillings! A modern reader may be excused if this passage conjures up for him the specter of runaway inflation, but for the chronicler and his public it meant famine and panic in the market place. Why should King John have foreseen famine and panic as the inevitable sequel to his own survival? And why should the chronicler, as well as the monk of Swineshead, have considered this sequence so obvious that it called for no explanation? Miss Margaret Murray in *The Divine King in England* uncovers the strange beliefs that seem to have underlain the King's great oath and justified the monk's deed in his own eyes and his superior's, a vignette of medieval behavior baffling for us but clear and simple then.

Here, then, is the story of King John's death as put down about the year 1483, more than 250 years after the event, by the chronicler of St. Albans:¹

The Kyng came by the Abbey of Swynesheade, and there hee abode two dayes; And as he sate at mete, he axed a Monke of the house, How moche that loof was worth that was sette before hym uppon the table > And the Monke said, That the loof was worth but an half-penny. O said the Kinge tho [then], Here is grete chepe of brede; Now sayd he tho, And [=if] I may lyve ony while, such a loof will be worth xx. shillinges or half a year be gone. And so whan hee sayd this worde, moche hee thought, and often hee sighed, and toke and etc of the brede, and sayd; By God, the worde that I have spoken, it shall be soth. The Monke that stode before the Kynge was for this worde full sory in his herte, and thought rather hee would hymselfe suffre deth, and thought yf he might ordeyne therefore some manere remedye. And anone the Monke wente unto his Abbot and was shriven of him, and tolde the Abbot all that the Kynge had sayd; And prayed his Abbot for to assoyle [absolve] him, for he would yeve the Kynge such a drynke, that all Englonde

I. The extract from the *Chronicle* is copied from the *History of King John*, by William Prynne, London, 1670, pp. 36-7.



PLATE xn. Hieronymus Bosch. The Last Judgment. Detail: Spitting toad.
Munich, Bayerische Staatsgemaldesammlungen.

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sholde be glad thereof and joyfull. The[n] yede [went] the Monke into a gardeyne, and founde a grete Tode therein, and toke her up and put her in a Cuppe, and prycked the Tode thorough with a broche many tymes, tyll that the venym came out of every syde in the Cuppe, And tho toke the Cuppe and filled it with good ale, and brought it before the Kynge, knelynge sayenge; Sir, sayd hee, Wassayll, for never the dayes of all your lyfe dronke ye of so good a Cuppe. Begyn Monke, sayd the Kynge: and the Monke dranke a grete draught, and toke the Kynge the Cuppe, and the Kynge dranke also a grete draught, and set downe the Cuppe. The Monke anone ryght wente in to farmerye [infirmery] and there dyed anone, on whoos soule God have mercy, Amen. And fyve Monkes synge for his soul specially, and shall whyle that the Abbaye standeth. The Kynge rose up anone full evyll at ease, and commaunded to remove the table, and axed after the Monke; and men tolde him that hee was deed, for his wombe [belly] was broken in sundre. Whan the Kynge herde this, he commaunded for to trusse, but it was for nought, for his belly began to swelle for the drynke that he had dronke, and within two dayes hee deyed, on the morowe after saynt Lukis daye.

That 'great toad' found in the garden at Swineshead could only have been the common toad of western Europe, *bufo vulgaris*. This is the same toad that George Ripley, a writer on alchemy, saw in a vision late in the 15th century, and commemorated in curious verse. His short poem, which we reproduce as it first appeared in print, eloquently expresses medieval man's repugnance for the toad, and reveals how intimate Ripley and his circle must have been with the toad's milky exudate and its fearsome virtue.

Our quotations concerning the toad go back to the Middle Ages and the Renaissance, but the ideas therein expressed lived on until recent times. One William Northcote, for many years a surgeon in His Majesty's Navy, published in London in 1770 a serious medical work, *The Marine Practice of Physic and Surgery*, a reference book for use on ships. In it there is a chapter on poisons, and coming to the toad, Mr. Northcote has surprising things to say:

The toad is full of venom, and the very centre and repository of terrestrial poisons... they discharge their venom on herbs (particularly strawberries) by pissing, spitting, and vomiting; this is not only pernicious by getting into the body, but by being sprinkled on the skin, unless washed off immediately with urine and salt.

When a person is infected, his skin turns yellow, his body swells universally, his lips and tongue grow black, and a stammering supervenes; he is seized with an asthmatic shortness of breath, vomiting, cold sweats, convulsions, fainting, and at length with death, if not timely remedied, [p. 421]

Mr. Northcote is guilty of patent absurdities, but the fact remains that we cannot deny for sure his clinical description of the victims of toad poisoning, for modern medical records offer us no histories of such cases. This seasoned practitioner of the 18th century was closer than we, chronologically, to the era when



THE
VISION OF
Sr: GEORGE RIPLEY:
CHANON OF BRIDLINGTON.



Hen busie at my booke I was upon a certeine night,
 This Vision here exprest appear'd unto my dim-
 (med sight,
 A *Toade* full ruddy I saw did drinke the juce of
 grapes so fast,
 Till over charged with the broth, his bowells all to braist;
 And after that from poysoned bulke he cast his venome fell,
 For greif and paine whereof his Members all began to swell,
 With drops of poysoned sweate approaching thus his secret Den,
 His cave with blasts of fumous ayre he all be-whyted then;
 And from the which in space a golden humour did ensue, (hew:
 Whose falling drops from high did staine the soile with ruddy
 And when this Corps the force of vitall breath began to lacke,
 This dying *Toade* became forthwith like Coale for colour blacke:
 Thus drowned in his proper veynes of poysoned flood,
 For tearme of eightic dayes and fowre he rotting stood:
 By tryall then this venome to expell I did desire,
 For which I did committ his carkase to a gentle fire:
 Which done, a wonder to the sight, but more to be rehear'st,
 The *Toade* with Colours rare through every side was pear'st,
 And VWhite appeared when all the sundry hewes were past,
 Which after being tincted Ruddy, for evermore did last.
 Then of the venome handled thus a medicine I did make;
 VWhich venome kills and saveth such as venome chance to take.
 Glory be to him the graunter of such secret wayes,
 Dominion, and Honour, both with Worship, and with Prayse.

A M E N.

VERSES

Fig. 2. From *Theatrum chemicum Britannicum*, by Elias Ashmole, London, 1652.

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men knew the properties of the toad's venom, and his account of the symptoms is the only one emanating from a medical pen known to us. It stands thus uncorroborated and unchallenged, a wisp of dubious expert testimony in what would otherwise be a scientific vacuum.¹

1 here exists an additional body of evidence of a different order testifying to the toad's sinister grip on the popular imagination in times gone by. Men take refuge in euphemisms when they talk about things that move them profoundly. People 'pass away' rather than 'die', and Satan becomes the 'Evil One'. Abhorred creatures are called out of their names, or else their names are subjected to irregular distortions in sound.

In the languages of Europe few creatures can compete with the toad for evasive nomenclature. The measure of this tabu lies in the number of etymologically unrelated words for it, not to speak of the variety of dialectical variants for each word. Here are a few of the important ones: in Latin *bufo*, and in Italian, *rospo* and *botta*; in Spanish, *sapo* and *escuerzo*; in French, *crapaud* and *hot*; in German, *Krote*; in Russian, *zhaba*; around the North Sea, *padde*; and in English, 'toad'. An abundance of diverse names like this makes difficulties for the philologist, who has more to show for his efforts when he goes coursing through the Indo-European languages after words like 'wolf' and 'fox', words that turn up in more or less regular mutations in various languages. Some of the words for 'toad' defeat the philologists completely. Take 'toad' itself. It exists in several variations in English, of which 'tad', as in 'tadpole', is the most important. It is genetically related to the three-syllabled variants in Anglo-Saxon, *tadie* and *tadije*. There the trail is lost: no remoter ancestry is known for the word, and it has no kin in other tongues.

We believe that all, or almost all, of the words for 'toad' in Europe can be explained, if we look for the figures of speech that are latent in them by focusing our attention on the creature itself. Instead of attacking the 'toad' problem by frontal assault, let us approach by a postern gate, viz., through the Celtic languages. We know the words for 'toad' in five Celtic languages, and, as befits a creature veiled by tabu, the five words appear to be unrelated to each other. From ancient Gaul *craxantus*² survives in a single citation. In Cornish the

1. In the second century before Christ an Ionian Greek, Nikander of Colophon, composed a metrical essay entitled *Alexipharmaca* on poisons and their antidotes, and in lines 567-594 he discusses toad poisoning. His observations are obscure, perhaps deliberately so, but in tone they are not far removed from Mr. Northcote's.

As we go to press we learn that Howard F. Fabing, M. D., of Cincinnati, has been giving intravenous injections of bufotenine, the toxic agent secreted by the epidermal glands of the toad, to volunteers in the Ohio State Penitentiary.

2. See *Französisches Etymologisches Wörterbuch*, by Walther von Wartburg.

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toad was *croinoc* or *cronec*, and this meant 'the skin' or 'the hide', from *croin*, meaning skin. The Cornishman referred to the toad by its skin, covered as it is with pustules, and notorious for the way the creature blows itself up with air like a sac when making its eerie call. In Welsh the toad is the *llyffant*; this appears to mean 'the slimy one,' with obvious reference to the slippery secretions of the skin. The common toad does not exist in Ireland, and the only toad reported there is the *bufo calamita*, known in English as the natterjack. Its range in Ireland is so limited that almost no natives have ever seen a toad: the natterjack has been found in historic times only over an area of some twenty square miles, around Castlemaine Harbor at the head of Dingle Bay in Kerry. The expression for 'toad' in Irish is 'the poisonous frog' - *losgann nimhe*; and since the word for frog - *losgann* - means 'the burning one', we arrive ultimately at 'the poisonous burning one' - a doubled reference to the toxic, stinging secretion of the pustules.

Now we turn to the Breton language, and here perhaps we discover a loose end to Ariadne's thread, a possible clue to our problem. The word for toad in Breton is *tousec*. It comes from the Latin *toxicum*, and therefore means 'the poisonous one'. On an earlier page we said that the standard word for 'toadstool' in Breton is *kabell tousec*, wherein *kabell* (from the Low Latin *cappa* and *capello*) means 'cap'. When the early Bretons spoke of the toadstool as the *kabell tousec*, the term meant to them 'the poison cap', as well as the toad's cap; and the variant *skabell tousec* could have meant 'the poison stool' as well as the toad's stool.¹

In Britain, the island that the Bretons had left behind, are we surprised to discover that the Anglo-Saxon word *tosca* meant toad? It is, we submit, identical to the Breton word, offspring of *toxicum*, and another example of the 'poisonous one'. We have mentioned the English name for the *bufo calamita* - the natterjack. We believe that the root of this word is to be found in the Anglo-Saxon word for poison - *ator*; a word that as 'etter' survived in English for centuries, and still circulates in dialect, to designate the venom of a reptile, and the corrupt matter that oozes from a suppurating ulcer or abscess. An 'attercop' is an old word for a (supposedly poisonous) spider. In modern Dutch *etter* still means pus. If we are right, what we now call 'a natterjack' was once 'an atterjack', the shuttling V being a well known linguistic quirk. The 'jack' is simply the same element that we find in the 'jumping-jack'. The 'atterjack' is then a 'poison jack', and an Anglo-Saxon rendering of the Latinism *tosca*.

Let us pause on *tosca*, that long forgotten word for the toad. It had a doublet

I. See *Lexique Etymologique du Breton Moderne*, by Victor Henry, Rermes, 1900; p. 268.

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in Anglo-Saxon, *taxe*, which survives in a single citation. The alternation in the vowels reminds us of 'toad' and 'tad', and also of a parallel in Latin: *toxicum* meaning 'poison' and *taxus*, 'yew'. In antiquity the yew was notorious as a poisonous tree, and the adjective *taxicus* was popularly associated with *toxicum*. In Greek ΤΟ^ΟV meant 'bow' and 'arrow' and 'bow-and-arrows'. Philologists are inclined to deny a link between the Greek and the Latin words, and even between the Latin words themselves, but concede that the problem is unclear. Until we know more about the role of bows and poisoned arrows in early magic and myth, it is well to suspend judgment. Bows were made of yew, and arrow-heads were smeared with poison, perhaps from yew. Robert Graves has pointed out¹ that arrow-heads were sometimes knapped with double tangs to resemble the yew. The making of such arrow-heads demanded far more patience and skill than the simple willow-leaf and elder-leaf points, and would be less effective in hunting or fighting. They must have been ceremonial in function and were undoubtedly bathed in *mana*. As we look back in recorded history, our 'toad' or 'tad' emerges from the Anglo-Saxon world as the venomous helpmeet of sorcerers. The very name of the creature, *tousec* or *tosca* or *taxe*, is redolent with poison, potent with *mana*. Down through the Middle Ages and into modern times the toad was still freighted with this primitive cargo of evil. *Tosca* and *taxe* may have contributed to the shaping of our words 'toad' and 'tad'. As we said before, the etymology of 'toad' is unknown. We must consider the possibility that, by steps that may forever remain obscure, the Anglo-Saxon words come down to us in 'toad' and 'tad' by lineal descent. The irregular mutation of *-sc-* and *-x-* into 'd' could have been a euphemistic substitution.²

If 'toad' descends etymologically to us from *toxicum*, then in English as in the Breton tongue a 'toadstool' in its ultimate meaning is a 'poison stool', and the idea of poison, rather than the toad, may have been dominant in the minds of those who first applied this term to the wild fungi in the Anglo-Saxon world. In any case, whatever the etymology, the cultural soil in which 'toad' had its beginnings explains that aura of abhorrence which bathes the word to this

1. See his *White Goddess, a Historical Grammar of Poetic Myth*, Creative Age Press, New York, 1948, footnote on p. 320; also p. 38.

2. If Latin *-x-* became *-s-* in *tosca*, then the Anglo-Saxon word results from the omission of the middle syllable, *toxicum* becoming *tos'ca*. But if *-x-* by phonetic transposition became *-sc-* we arrive directly at *tosca* by the erosion of the last syllable. If *taxe* or a hypothetical *toxe* became by euphemistic mutation *tadse* or *todse*, the evolution into 'toad' or 'tad' is easy, the sibilant being lost by a popular back-formation of an erroneous singular; cf. 'toad's stool' which becomes 'toad-stool'; also 'pea', 'asset', 'shay', 'sherry', 'cherry', etc., all of which have lost the sibilant with which they originally ended. The mutation of 'c' into 't' is not altogether conjectural. In the Anglo-Saxon dictionary of Joseph Bosworth and T. Northcote Toller, under *tosca*, we find a quotation in which the plural of *tosca* appears with 't', - *tostan*.

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day in the English language. We discover why the Oxford Dictionary fails to satisfy us when it dismisses the problem of the toadstool by calling it a 'fanciful' term. We realize why the headline in *The Times*, EDIBLE TOADSTOOLS, shocks us as a contradiction in terms.

We have already observed that the Irish word for 'frog' is the 'burning one'. Here again the reference is to the secretion of the epidermal glands of the amphibian, the secretion that stings when it comes into touch with a mucous membrane. This Irish word has its parallels in certain of the Germanic languages. In Old High German the verb 'to burn' was *zusken*, and by regular mutation of sounds this explains the Danish word for the toad, *tudse*, in which today the letter *d* is silent. In Swedish the corresponding word is *tossa*, with dialectical variants *tosk* and *tusk*; and there also survives a citation from 1652 in the form *tadza*, pronounced perhaps as 'totsa' would be in English. In all these words the toad is called the 'burning one', as the frog is in Irish. These words find their semantic parallel in the vulgar Dutch term *paddescheet*, the stye with its burning sting, to which we called attention earlier. In Greek the word for toad, εἴπῶν?, is usually explained as meaning 'the brown one', but brown is the burnt color, and Professor Andre Martinet has suggested that εἴπῶν; may refer to burning rather than to the color.

We know that the secretion of toads was used by the practitioners of witchcraft. We know that in ancient Rome the lethal properties of the wild fungus known as the deadly amanita or destroying angel or death cup were familiar to the practitioners of venomy, as we choose to call the art of murder by poison. But no positive evidence survives, so far as we know, to show that in the practice of witchcraft the secrets of the fungi were utilized; no evidence, that is, beyond 'toadstool' itself, this humble folkword with its secret message. Does the absence of positive evidence mean that the toadstool was not used in the practices of the Old Religion, or that the secret was successfully kept? For the present we leave the answer to the reader.

BASQUES AND SLOVAKS

In research it is often the small remainder of unexplained evidence that points the road to further discoveries, and even perhaps to an abrupt step-up in the scope and thrust of the inquirer's purpose. We believe that we may have discovered for the first time the explanation for the 'toadstool', the secret lying in the original but now forgotten sense of 'poison-stool'. But our answer to this question leaves certain tantalizing facts unreconciled. Why do the Danes for 'toadstool' say *paddehat*, rather than *tudsehatt*?¹ Of their two words for 'toad', why do they link with the wild fungi the one that does not refer to the poisonous secretion? In English too we find paddock-stool. In Dutch there exists no name for the toad, so far as we know, that means 'the poisonous one'; yet the Dutch also say *paddestoel*.

In short, while we have perhaps explained the word 'toadstool', we have not answered the whole of our question, for we find toads linked with fungi where poison is not involved. We must ask ourselves whether there was not a deeper and broader association between toads and mushrooms, whether the two orders of living things did not possess in common some other attribute that originally struck the primitive fancy and led to verbal kinship. If this be so, then the words based on the common attribute of poison may have been a late development, restricted in area, superimposed on an older and broader verbal stratum, a verbal variation on an exceedingly ancient theme. The use *oftoxicum* in the context of toads and fungi may have been merely a Latinism devised by practitioners of an esoteric witchcraft cult around the North Sea basin in the early centuries of the Christian era.

It turns out, indeed, when we look further afield, that the toad-fungus link is not confined to the North Sea countries. In two areas of the Continent, far removed from each other in every sense, the same semantic tie occurs. First, there is the Basque country of Spain (not France), where in the Basque language several names for wild mushrooms involve the Basque word for toad, which is *zapo* or *apo* or (in certain combinations) *amo*.² The *amanita muscaria*, which in parts of France is sometimes called *crapaudin*, carries a Basque name in parts of the Biscay and Guipuzcoa country that is an exact semantic equivalent of the French word: viz., *amoroto*. In a contiguous area *apontto*

1. *Tudsehat*, reported in the Danish lexicons, appears to be obsolete and to have been always rare. But a reliable informant tells us that in the Low German dialect of Holstein *tutzenstol* is in current usage.

2. The mutation of *p* into *m* is well recognized in Basque; e. g., Pentecost becomes Mendekoste.

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is the name bestowed on a certain distrusted wild fungus, and this word also serves thereabouts as a term of personal abuse. The root is *apo*, 'toad', in both these words. Two excellent species of wild mushrooms, *marasmius oreades* and *marasmius urens*, are rejected by the Basques of the same provinces, who call them 'viper-fungus' and 'toad-fungus' - *suge-perretxiko* and *zapo-perretxiko*. (Note this our first encounter with the viper theme.) Except in the Basque country, we have found no trace of the toad figure in the fungal vocabulary of Spain, but we possess one straw of evidence indicating that formerly it was in use. Dr. Stephan F. Borhegyi, the Hungarian archeologist working in Guatemala, on a visit to the village of Jocotan in the Department of Chiquimula, discovered that the Spanish-speaking people in that community used neither *hongo* nor *seta* for 'mushroom': their pejorative term for species believed to be poisonous is *sombrilla de sapo*, 'toad's parasol'. Remote Jocotan is known to linguists for the Spanish archaisms that survive there, and one assumes that the *sombrilla de sapo* is a fossilized survival of an expression current somewhere in 16th century Spain.

Far from the Basque country, in the Ukraine, the natives speak of any wild mushroom that they reject as *zhabjachyj hryb* - the toad-like mushroom. A little to the West, in Slovakia near Tatra, a native informant reports to us that such despised fungi are variously called *zabaci huby*, the toad-fungi; *had'ad huby* and *had'unke huby*, both meaning viper-fungi; or *salene huby*, mad fungi. We are unable to circumscribe the area in the Slav world where the toad theme survives in the mushroom vocabulary. It is unknown in Great Russia.

The semantic analogies between the Basque terms and those used in the Ukraine and Slovakia, combined with the evidence around the North Sea, suggest a profound substratum of folk associations between fungi and toads in the Indo-European world, a substratum that is today everywhere silted over except for the three outcroppings on the map of Europe¹. This inference finds support in a further surprising fact. Throughout the Slav world the most beloved general word for the edible mushroom of forest and field is, in its Russian form, *grib*. In the Slavic mind there is no association between this happy word and the creature we call *zhaba*, the toad. But now turn to the Catalan language. There we find that the word for toad is *gripau*. No Catalan connects it with wild fungi. Yet it seems clear that the etymological root of Catalan *gripau* and of Russian *grib* is identical! That root, surviving virtually unchanged

1. In the Romansch language *pawn de pdder*, meaning 'monk's bread', is the general term for fungi. Could *pdder* be a folk corruption of Dutch *padde*? If so, the term is identical semantically to the French *pain de crapaud*. *Padde*, coming from Dutch, spread far beyond the confines of Low German, being recorded for Frankfurt and Leipzig as far back as the 16th century.

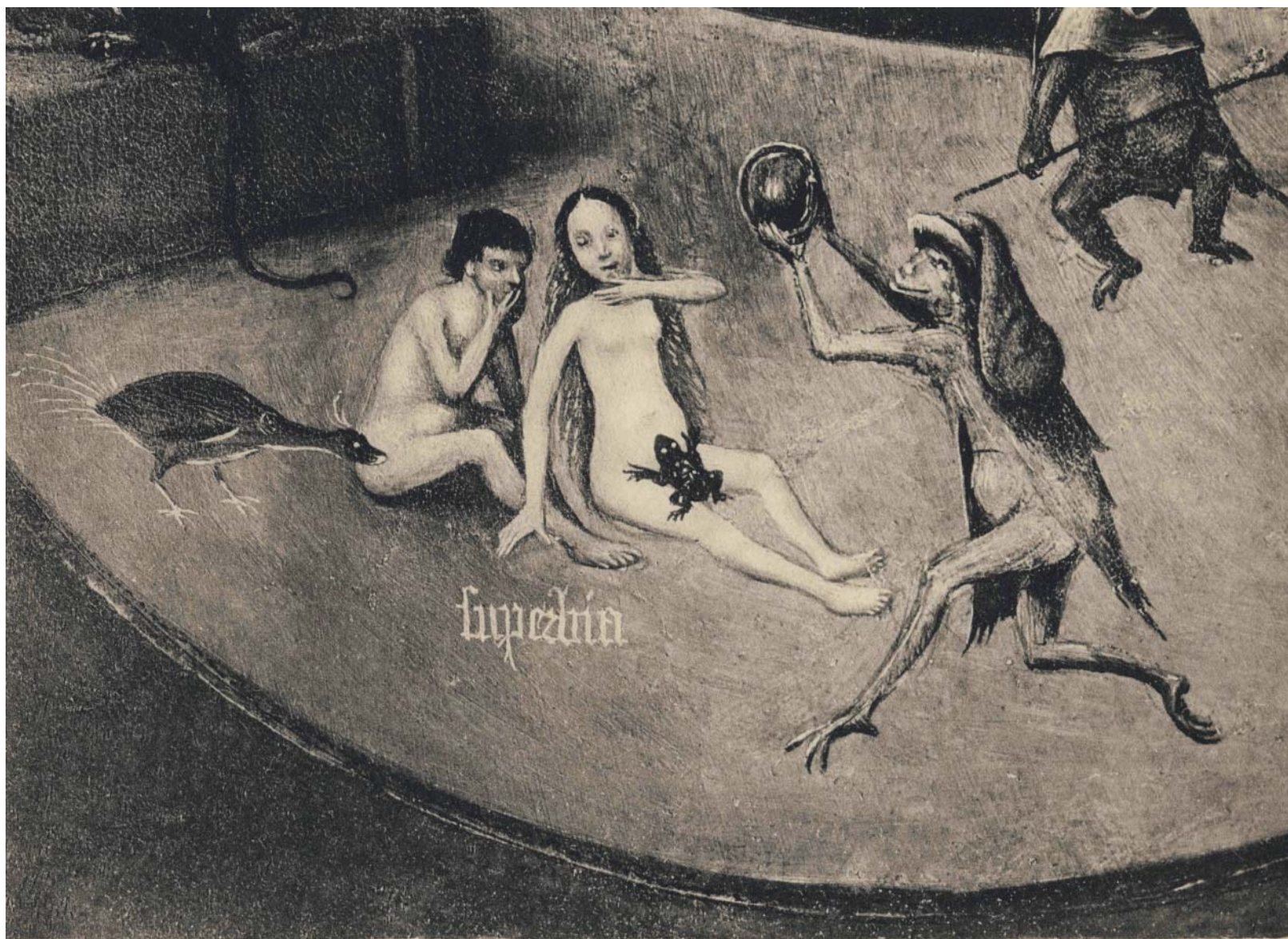


PLATE xiii. Hieronymus Bosch. The Seven Deadly Sins. Detail: Superbia. *Madrid, Prado Museum.*

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from remote times in two widely separated languages in words with wholly different meanings, carries the sense of gripping, grabbing, seizing, scraping, grubbing, digging. Here is no allusion to poison, no kinship with *toxicum*. If 'toad' evolved from *toxicum*, it is a late and geographically circumscribed intruder in verbal history, by comparison with the perspectives that we now contemplate. Only by a kind of linguistic triangulation into the past can we arrive at a reconciliation of Russian *grib* and Catalan *gripau*. And we must defer this until we have explored certain other matters.

It would be easy to spin an argument that in the early European mind toads and fungi shared a chthonian existence - toads hibernating in soft earth and then thrusting themselves to the surface; fungi living out the better part of their existence hidden in the soil, but, when circumstances are propitious, shouldering their way through the soil's crust to the light of day. One could even postulate a primitive earth-cult with its focus of worship in the earthy toad and the toadstool. But perhaps we can find a more solid basis for inquiries than such facile and unsubstantial speculations.

*THE CRIPPLE, THE TOAD, AND THE DEVIL'S
BREAD*

In the Middle Ages the French viewed the toad somewhat differently from the English, and in this section we shall digress briefly to clarify the distinction. With the French the emphasis was not directly on the venom but on the creature as an incarnation of Satan.

In Old French there was a curious word, *le lot*, which according to the dictionaries meant 'toad', and they add that it fell into disuse in the 15th century. For a time it lingered on in a single phrase: *enfle comme une bote*, 'blown up like a female toad', a phrase that beyond the Loire had already become *enfle comme un crapault*. (The female is much bigger than the male, and the older simile thus carried a double superlative.) *Bot* in the sense of toad survives to this day in many regional dialects of France and also in the Italian *botta*. The word in a different meaning still circulates in standard French, in the fossilized term, *pied bot*, 'club foot'. What links toads to club feet?

The origin of this word is not in doubt. *Bot* comes down from a Germanic root meaning 'blunted', 'malformed', 'clumsy'. It exists in an English form: the pudgy, clumsy hands of babies are 'puds', as are the forefeet of certain animals. 'Puddifoot' is a family name, originally a nickname for a cripple. But why should a toad, with its delicately articulated extremities, be called a cripple?

We believe that the history of this little word is a chronicle of successive metaphors, and that its primary role was as a euphemism for Satan. The Foul Fiend in the Middle Ages possessed certain sharply defined attributes. He wore horns. He had a tail. For hands he showed claws. He was enveloped in the hairy hide of an animal. He was sometimes represented as glorying in shameless priapism. Finally, he was a cripple, one leg ending either in a club foot, or a splayfoot, or a bird's talons, or a paw, or a hoof- a cloven hoof. To this day horns and cloven hoof are familiar metaphors for wickedness in English. There are low circles in which 'cripple' serves as an epithet of singular viciousness, beyond anything that mere lameness justifies. Eric Partridge in his *Dictionary of Slang* cites what he calls a senseless phrase used by English schoolboys to spur their teammates to greater efforts: "Go it, you cripple!" Sometimes the language of children preserves words and phrases that have disappeared among adults, and we believe these schoolboys are in hopes that the very Devil will possess the players on their side. Perhaps our suggestion explains another folk belief

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that is still current, the notion that cripples are capable of more than normal sexual prowess.

In the first instance, then, *le hot* meant 'the Cripple', a euphemism for Satan.¹ In this sense it survived into the 16th century in the oath, *Vrai lot!* - 'by the very Devil'. Elizabethan England borrowed this French oath intact. The Oxford Dictionary gives as its earliest citation the following, dated 1584: "A bots on thy motley beard!", and the final citation is from 1719:

Bots on them all Both
great and small!

Unaccountably, the Oxford Dictionary says the origin of 'bots' is unknown.

Satan's sinister limp seems to have vanished today from men's memories. It was vanishing already in Napoleon's time. His coadjutor Talleyrand, notorious for his loose life and lack of scruples, limped from his earliest years; and this physical deformity did not escape his enemies, who dubbed him *le (liable) boiteux*, 'the limping devil'. (*Boiteux*, by the way, is unrelated etymologically to *le hot*.) In earlier times either the noun or the adjective would have been redundant. An English caricaturist devised a satirical coat of arms for Bonaparte, supported on either side by a Devil, on the right by the Corsican Devil with a cloven hoof, and on the left by Talleyrand, the French Devil, with a reptilian extremity. Was it not Talleyrand's distinction to be the last major figure with a limp whose infirmity was held against him as a demonic stigma? We reproduce this savage print in our Plate No. XX.

In the next stage, *le lot* underwent a shift from Satan himself to the creatures into which he was supposed to transform himself- the toad, a certain kind of nocturnal bird, and bats.² The nightjar, kin to the American whippoorwill, was known in parts of France up to recent times as *le hot volant*, and also as *le crapaud volant*, names so layered with metaphors that they could be fairly translated in any of three ways, the flying Devil, the flying Cripple, and the flying Toad. Even more interesting is the widespread use of *le hot volant* for the bat, a creature that was formerly steeped in sinister associations. Its nakedness, its blackness, its miraculous agility in night flight, its facial features stretched taut

1. A parallel for *hot* is to be found perhaps in *bratze*, a colloquial name for the toad reported in Bavaria, which can mean 'paw', 'claw', 'clumsy foot'. But *bratze* must be considered in conjunction with certain other words for the toad: Bavarian *braste*, suggestive of the lamenting cry of the toad; the Bavarian *broz* and the Austrian *brotze* and *bratling*, these relating to the swelling of the toad.

2. It is permissible to conjecture that the Germanic etymon of *hot*, in the sense of a rough lump, attached itself directly to the toad, rather than through the mediation of Satan. There might even be a kinship with the Dutch *padde*, the English 'pad' and 'paddock'. But the application of the word to the nightjar and to bats is proof that in France in the Middle Ages the idea of Satan was uppermost.

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in a subhuman grimace, the strange profile of its wings with their articulated struts, its vampirish repute - all these attributes caused it to be feared and loathed as the very Devil himself, and justified medieval man, in his own eyes, in putting bats to death, whenever caught, by methods of hideous cruelty, similar to the treatment accorded to toads.

The English word 'bat' for the flying rodent is first recorded in the year 1523. Formerly the creature had been a *bakke*, and philologists have been at a loss to explain the irregular mutation in its ending. Have they not been looking in the wrong direction? Surely Tudor England borrowed the new word 'bat' from France, altering the vowel under the attraction of the native Middle English word. (The same vowel change was to take place shortly afterwards in God's name: in the profanity of the iyth century 'God' by a euphemistic mincing of the vowel became 'Gad'.)

'Old Boots' is one of the names by which the Devil has been known in English. Is it not a popular adaptation of 'bots'? When Bella, in *Our Mutual Friend*, calls her husband a 'Clumsy-Boots',¹ is not Dickens, all unawares, recapturing for us a faint echo of the stumping Cripple's awkward limp, now sugared down into a loving pet-name? Then there is Puss-in-Boots, *le Chat Botte*, the fairy tale that Charles Perrault first put on paper late in the iyth century, in which a cat displays superhuman acumen when shod in boots. Do we not detect here a punning echo, come down from much earlier, of the demonic Cripple's prowess?

Demonic possession connotes mental disturbance, and we think this is why 'bat' in English, especially in slang, is linked with lunacy. 'Bats' is a vulgar word for delirium tremens, and those who go 'on a bat' indulge in wild behavior, while the man with 'bats in the belfry' is quite 'batty'. If we are right, all these words, full of vigor in the spoken language, stem back to *le bat*, the limping Arch Cripple.

Satan today has degenerated into a pallid personification of evil. In the Middle Ages he was no abstraction, no mere Idea. He was hot flesh and blood. Miss Margaret A. Murray in her studies of witchcraft has shown that his bestial attributes - the horns and hoof, the claws, hide, and tail - were those of the celebrant in the nocturnal rites of the witches' coven, the rites belonging to the religion of the Horned God, as she calls this divinity, the autochthonous religion of Europe and the Near East which slowly gave ground before Christianity and on which in its expiring throes the triumphant enemy bestowed the conde-

i. Part iv, Chap. xi. For a study of names used for the Devil in English, see Charles P. G. Scott, 'The Devil and his Imps', *Transactions of the American Philological Association*, Vol. xxvi (1895), pp. 77-146.

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scending name of witchcraft. The master of the ceremonies was known to his followers by many names, such as Robin Goodfellow in England. On the tongues of his enemies in the Christian Church Militant he was Satan and the



Fig. 3 ROBIN GOODFELLOW

Devil, the Foul Fiend, the Seducer, he of the Horns and Cloven Hoof, *le Bot*. If Miss Murray is right, we are discussing a religion practiced by our ancestors for thousands of years, which expired just yesterday, and which we can now study only through the eyes of the Church that was its deadly foe, and through clues such as we are here discussing. It is not surprising that when Hieronymus Bosch painted his famous *Seven Deadly Sins*, the successive scenes swarm with toads, the incarnation of Satan, as well as other reptiles. We reproduce one of these vignettes, representing the sin of Pride or *Superbia*, with a peacock fittingly present. Satan in the shape of a great man-like toad holds up a mirror to the worldlings.

In Queen Elizabeth's reign, probably before 1588, there was published in England a poem entitled *The Mad Pranks and Merry jests of Robin Goodfelloiv*,¹

I. The pamphlet was republished privately by the Percy Society, London, in 1840, using the text of the 1628 edition, with commentary by J. Payne Collier, Esq., F.S.A., on whose information we have relied.

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It seems to have appeared in a long succession of editions, of which the earliest known to survive bears, we believe, the date 1628. The verses are of little worth, but they and the illustration that accompanies them are valuable as one of the few spontaneous expressions of the witchcraft cult emanating from within the circle of sympathizers. Here is the Horned God in proud panoply, *le Bot* in action. Here is Robin Goodfellow, Hob-goblin, Will the Wisp, Mad Crisp. No mushrooms appear in the woodcut that illustrates the 1639 edition, which we reproduce, but their presence offstage may be inferred, for we are told that Robin was sired by Oberon, whose fungal attachments we shall shortly point out. The witches of the coven are dancing in a 'fairy ring', but there is no evidence that these rings, where the grass grows differently, were linked with mushrooms before the 18th century. In the poem we learn that Oberon had been looking for his offspring high and low:

At last upon a summer's night
King Oberon found him out, And
with his elves in dancing wise
straight circled him about, The Fairies
danc't and little Tom Thumb
on his bag-pipe did play And thus they
danced their fairy round
till almost break of day.

The artist who carved the woodcut, though crude in his technique, conveyed his message effectively. In the heavens fly two black birds, and he took sufficient pains for their silhouettes to be unmistakable. They are none other than nightjars, sometimes called goatsuckers or night ravens. These are the *lots volants* of evil augury, the sinister birds that held our ancestors in dread fascination:

. . . the night raven Which
doth use for to call Men to
Death's haven.

The toad appears as a visual symbol of Satan and the pagan god in French iconography in the late Middle Ages. One of the most famous episodes in early French history was the conversion of King Clovis to the Christian faith. His wife Clotilde was a Christian, but he resisted the attractions of the new creed until he fought the battle of Tolbiac in the year 496. When the battle was going against him he swore that he would abandon the old religion if the Christian God would give him victory. The tide turned, and shortly thereafter he was baptized by St. Remi at Reims.

In that city there survive a number of tapestries woven in the 15th and early

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16th centuries that depict the life of King Clovis. They show him fighting at Tolbiac as a pagan clothed in a surcoat adorned with toads, under a standard bearing the heraldic emblem of toads. The creatures are pictured as from above, their legs spread-eagled. In the next scene, where St. Remi is giving instruction to the King, the heraldic toads vanish. In the third scene the king is baptized, while high above the font an escutcheon appears bearing fleurs de lis, as though to give a stamp of lofty approval to the happy event. Nearby a dove descends bearing the holy ampulla with the oil for the king's anointing.

Heraldic emblems did not come into use until about A.D. 1000, and the tapestries in Reims are therefore an anachronism, a didactic invention of the Middle Ages.¹ Toads never figured in the arms of any French king. But those who designed these tapestries were not guilty of mendacity. It was their purpose to convey a simple message to the unlettered laity, and how better could the conversion of King Clovis be taught through pictures than by showing the pagan king waging war under Satan's banner? Here the symbols have come full circle: in the beginning the Foul Fiend was *le Bot* - the Cripple - and then this name jumped to the demonic toad, and now the toad, commonly known as *le hot*, stands for the club-footed Fiend. Heraldic creatures are mythical at best, and here we have myth compounding myth, a legend about a symbol that never was. The belief in Clovis's toads circulated chiefly among lowly and unlettered folk, "par le vulgaire et par le menu peuple", and *le hot* flourished in the same milieu.

We believe that we are the first to direct attention to the demonic multivalence of 'the Cripple' in medieval France, but the evil emanations of toads are well known. Dirk Bax, for example, in his recent book on Hieronymus Bosch² points out their malign meaning for this painter. He reminds his readers of the old belief that witches could transform themselves into toads. He recalls the papal bull published in the year 1233 by Gregory IX wherein toads were called the symbols of the Devil and magic. He reports an episode in 1610 when a French *sorrier* discovered a cast in the left eye of a child, the cast taking the shape of a toad's leg, and the child confessed that Satan had imprinted this *signum diabolicum* with his horn. According to an authority that Dr. Bax has found, St. Anthony beheld Satan in the shape of a toad with a human head, and if we

1. For a sceptical and charming discussion of these toads, see Claude Fauchet's *Origines des Chevaliers, Armoiries, et Héraux*, Paris, 1600, p. 17. See also C. Leber's *Collection des Meilleurs Dissertations, Notices et Traités Particuliers relatifs à l'Histoire de la France*, Paris, 1838, vol. xiii, pp. 198 ff. Leber quotes from Scevole de Sainte-Marthe (1572-1650), and the evidence indicates that the popular belief in the heraldic toads of the pagan French kings goes back at least to the beginning of the 15th century. From the 16th century to the 18th we find in both English and French sources frequent references to Clovis's heraldic toads. Today they are forgotten by almost everyone, even historians.

2. *Ontcijfering van Jeroen Bosch*, The Hague, 1949, p. 33, where the author also gives the sources for his statements.

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accept the assertions of yet another writer, the toads in Hell torment the sinners, and in turn are food for the damned. To this day, Dr. Bax says, the Flemings believe that toads spit venom, just as Bosch shows us in *The Last Judgment*.

From Simin Palay's recent dictionary of the dialects of Gascony and Beam we learn that in former days the Gascons spoke of a cast in the eye as a 'toad' — *crapaud* — and considered it a distinctive sign of the witch and sorcerer. Here is that same *signum diabolicum* which Dr. Bax reported from a different source. A cast in the eye is a painless blemish, but it reminds us of the *paddescheet* of the Dutch, that stye, inflamed and stinging, which people call the toad's excrement. Suddenly there dawns on us a lively and sinister meaning behind these faint folkloric hints linking toads with the human eye. In the days of the Old Religion in western and northern Europe, the toad gripped the imagination of our ancestors with a dread fascination such as the serpent has always exercised in the East and in India to this day. Yes, in cultural history the toad was the European equivalent of the serpent in the East. On its face strange, the folkloric link between toads and the human eye becomes clear if our surmise be right that the venom of the toad was deliberately used by the priests of the ancient cult to inflame the eyeballs, and thus heighten the awesome spell of the rites. Here may lie the reason why a genuine stye suggests the toad's secretion, why the cast in someone's eye was for the beholders the reminder and sign of demonic power.

By now the reader may fairly ask what our discussion of Satan and *le hot* has to do with the problem of the toadstool. In brief, toads figure in both the English and the French fungal vocabulary, but the figure of speech in English emphasizes poison, whereas in French demonic possession plays the dominant role. In the former, the 'toadstool' is a blanket malediction on all wild fungi, all of which are erroneously suspect as 'poison-stools'. In the latter, the *crapaudin* (like the Basque *amoroto*) is the name for a particular species, and this species is not one of the deadly mushrooms. It is the *amanita muscaria*, the mushroom that intoxicates and exhilarates, that gives hallucinations. It is the mushroom of demonic possession. Bad as are both Satan and poison, there is a difference between the two. The whole world rejects poison, but Satan always has a goodly following. Unlike lethal poison, Satan is seductive. There is thus a distinction in the inner meaning between the toxic 'toadstool' and the demonic *crapaudin*. The distinction is in the emphasis: the associations of the two terms overlap but do not coincide.

If our interpretation of *le bot* is correct, why do we not find this word figuring in France's fungal vocabulary? The answer is that we do. Eugene Rolland in



PLATE xiv. Conversion of Clovis. Tapestry in the Musee de Reims showing King Clovis in the battle of Tolbiac, his instruction in Christian doctrine by St. Remi, and his baptism. Woven in 1531.

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his *Flore Populaire* reports *bo* as a designation for gilled mushrooms in the Haute Saone, and *botet* in the Loire. He gives no explanation for these words, whose inner meaning becomes obvious now for us. It would be well for specialists in French provincialisms to concentrate on *bo* and *botet*, to determine whether they still survive and where and with what precise fungal application and in what contexts. In the center and south of France there are regions where *boutarel*, *boutareu*, and *boutairoul* are general words for 'mushroom'. They also mean in the langue d'oc 'barrel' and 'basket', but we suspect that in the sense of 'mushroom' they are a popular corruption of *boterel*, a diminutive of *le bot* that is not uncommon in France as a family name. A close scrutiny of the French dialects will certainly uncover additional links, until now unnoticed by scholars, between toads and mushrooms. On page 73 we mentioned the Gallic word for 'toad', *craxantus*, obsolete these many centuries. Does it perhaps survive in the Gascon name used for the despised and rejected boleti whose flesh turns blue on exposure to air — *craaue-maudit*, which would then mean 'the cursed toad'?

We conclude, then, that mushrooms and toads were linked together in France in former times as part of a cluster of folk beliefs having a demonic nucleus. The link was strongest, it seems, north of the Loire and faded out as one approached the Mediterranean. Apparently it stemmed from the Germanic or Celtic cultural strata that antedated Mediterranean influences, strata steeped in the blackest mycophobia. And this leads us again to Hieronymus Bosch.

One of Bosch's powerful paintings is the *Hay Wain*, to be seen in the Prado. It is a large triptych, and in the central panel, almost unremarked hitherto by commentators, there stands forth a giant boletus. So far as our inquiries have gone, this mushroom was the first significant representation of a fungus¹ after the ancient fresco of Herculaneum (which we reproduce on Plate LXXVI), a lapse of

I. The *Bulletin* of the Societe Mycologique de France in 1911 (vol. xxvii, p. 31) announced to the mycological world the discovery of a 13th century fresco representing the temptation of Eve. The mycologists who focused their attention on this fresco persuaded themselves that the Tree of Good and Evil had been portrayed by the artist as an *amanita muscaria*. The fresco, which we visited in the summer of 1952, is in a disaffected chapel in France, in the Berry, between Ingrandes and Merigny, near the Chateau de Plaincourault. The style is Romanesque, and this fits the date that the edifice bears - 1291. Since the initial announcement there have been numerous references to the fresco in mycological publications; e. g., *The Romance of the Fungus World*, by R. T. and F. W. Rolfe, London, 1925, p. 291; also John Ramsbottom's *Mushrooms & Toadstools*, pp. 46-7 and illustration facing p. 34; also *The Illustrated London News*, Nov. 21, 1953. The mycologists would have done well to consult art historians. The Plaincourault fresco does not represent a mushroom and has no place in a discussion of ethno-mycology. It is a typical stylized Palestinian tree, of the type familiar to students of Byzantine and Romanesque art. The German art historians have even devised for this oft-repeated motif the technical designation of *Pilzbaum*.

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more than fourteen centuries. Let us see if we can arrive at the meaning of this extraordinary mushroom, so boldly painted, at first glance so enigmatic.

The *Hay Wains* left-hand panel, of which we reproduce the upper part on Plate XXXVI, depicts with idyllic beauty the momentous events that took place in Paradise in the Beginning, up through the final scene where the Angel of the Lord drives Adam and Eve forth from Eden into the wilderness. The right-hand panel depicts Hell. The central panel is occupied chiefly by a huge load of hay, which is the dominating feature of a procession that enters the scene from Paradise on the left and disappears on the right heading for Hell. The wagon is being hauled by a miscellany of grotesque creatures who are personifications of the Sins. With a dead switch the Devil in the foreground drives on these monsters. The withered branch, as always in Bosch's symbolism, signifies cursed sterility, recalling the withered vine of Christ's homily. Sceptred king and mitred churchmen with their trains follow the hay-wagon, which as it progresses crushes little men like a juggernaut. Jesus looks down in anguish from Heaven, and a strange group of merry-makers disport themselves a-top the hay.

The hay wain represents pleasure, but it remained for Mr. and Mrs. Nicolas Galas of New York, in the course of their studies of Bosch, to discover the precise text that is illustrated, a passage in a book with which Bosch was familiar, Gregory the Great's *Morals on the Book of Job*, written after A.D. 600. In Book 32, paragraph 7, Gregory is commenting on the Vulgate text of Job 40: 4 (King James Version, Job 40: 9):

As he says by the Prophet, 'Behold, I will shriek over you, as a cart creaketh laden with hay' [Amos 2: 13], for since the life of the carnal is hay, as it is written 'All flesh is hay' [Isaiah 40: 6], in that the Lord endures the life of the carnal, he declares that he carries hay as a cart. And to creak under the weight of the hay is for Him to bear, with murmuring, the burdens and iniquities of sinners. [Vot. 3, Part 2, p. 514, of the English translation by J. H. Parker et al., published in Oxford, 1844-1850]

On the right in front of the wagon the great procession is joined by a small confluent stream of people pouring from a door-way as the hay-wagon approaches their earthly abode. They too are damned souls, as is declared by their leader's reaching up for carnal hay on the wagon, and by another branch, withered and cursed, that holds up the trapdoor of the habitation out of which this secondary stream emerges. In the door can be seen the peephole used by the inmates when the door is closed. In our opinion the doorway gives access, not to a cave, but to a turf-covered dwelling, of which the roof rises to a clearly identifiable peak, made by the upright post that is presumably the structural support for the primitive structure. On the left of that peak there lies a fruit, symbol of

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man's First Fall. On the right stands our mushroom. Bosch has painted not a mushroom, but a gigantic effigy, a mushroom sculptured in stone or wood. It represents a boletus, perhaps the boletus satanas, a species that to this day is popularly associated with Satan in Central Europe. The light color of the painted mushroom effigy is not significant, for it is the color of the material in which the mushroom is sculptured. The stem is covered with flecks like goose-flesh. The cap is disproportionately small, and from it emerges again the withered branch of the Biblical curse.

We have seen that in 16th century France mushrooms were called *pain de crapault*, 'toad's bread', a term that has been reported in modern times in Normandy. Contemporaneously, at the time of the Renaissance, the corresponding name in Flemish and Dutch was *duivelsbrood*,¹ 'devil's bread', a term now obsolete in the standard language, but historically documented in the larger Dutch and Flemish dictionaries. These two expressions, 'toad's bread' and 'devil's bread', superficially using different metaphors, are in essence perfect translations one of the other, for as we have seen 'toad' and 'devil' are synonyms. The effigy of a mushroom that Bosch the Dutchman painted was the effigy of the Devil's Bread, and the people who lived at the Sign of the Devil's Bread were bread for the Devil.

Our mushroom effigy is then a pictographic embodiment of a popular metaphor, and proclaims the curse that lies on the household dwelling within. This interpretation receives surprising support from an otherwise inexplicable detail of the painting. The base of the mushroom shows two flattened surfaces. Bread always bears the imprint of the vessel in which it is baked, and here we discover the beveled faces left by the Devil's bread-pan. How obvious this must have been for Bosch's neighbors in the Low Countries!

There remains a crucial question: why did Bosch introduce into this sermon in paint the minor tributary stream of Hell-bent sinners, emerging from the House of the Devil's Bread? Clearly this rather crowded detail of his exhortation on the carnal sins was not a capricious fancy. He was asserting something, but what; Here is our conjecture. The main stream of sinners is recruited from the Christian community, as evidenced by the trappings of the leaders. The tributary stream is fed by folk similarly damned but who have not belonged to the Christian fold. The Devil is the hot-blooded Devil of the witches' covens. The people crowding forth from the hovel do not lend themselves to a precise count but they are about thirteen, the full complement of a witches' coven with

i. See Hadrianus Junius' *Nomendator*, Paris, 1567, p. 144, where the word is spelled *duyuehbroot*; also the history of *duivelsbrood* in Dr. J. A. N. Knuttel's *Woordenboek der Nederlandsche Taal*.

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their leader the Devil, whom we may perhaps distinguish in this group. Here are then the 'fairy folk', who were wont to dwell in the remote and desert places and who paid no obeisance to Pope or Christ. They were described in vivid detail by the Swedish writer Olaus Magnus, whose *Historia de Gentibus Septentrionalibus* appeared in 1555 in Rome,¹ a generation after Bosch's death. The fairy folk dwelt in houses walled and roofed with turf, the roof being sup-



Fig. 4 PRINCE VISITING FAIRY FOLK, after OLAUS MAGNUS.

ported by a central post. A woodcut in Olaus Magnus shows the Swedish King Hotherus paying a visit on the fairy people and we reproduce it here, for we suggest that the house painted by Bosch springs from the same folk beliefs as the houses in the Magnus woodcut a half century later. Miss Margaret A. Murray may be right that a culturally distinct people, autochthonous, unlettered, and pagan, lived side by side with the Christian world in northern Europe down into Renaissance times. But whether that people existed or not, the belief in them existed and was generally accepted, and Bosch presents those cursed outcasts to us under the Sign of the Devil's Bread, a sinister and mycophobic Sign that marks for us the initial emergence of the mushroom world into the documentary annals of northern Europe.²

1. The English edition was published in London in 1658 as *A Compendious History of the Goths, Swedes and Other Northern Nations*. See Book m, Chapters 9 and 10. See also Miss Murray's *The God of the Witches*, Oxford University Press, New York, 1952, Chapter n.

2. The mushroom in the *Hay Wain* is not the only one painted by Bosch. In his ghostly portrayal of The World, strangely disturbing, on the back of the wings of the *Garden of Delights*, there are two unmistakable mushrooms, possibly three, all in the left-hand panel. Elsewhere we find shapes that suggest mushrooms, perhaps intended by Bosch to do so; e.g., one such shape in the left-hand panel of the *Garden of Delights* and two in the central panel, the table in the *Cure for Folly*, and various 'puckfist' shapes elsewhere. The demonic symbolism of the toadstool may have played an important and hitherto unsuspected role in Bosch's cosmos.

THE CRIPPLE, THE TOAD, AND THE DEVIL

For the medieval world the fairies were sinister beings, at least in orthodox eyes, and down to recent times the flavor of the old belief could still be detected in Sussex, where 'fairy rings' long continued to be called 'hag tracks'. By the end of the 16th century the fairies had become the dulcified sprites of modern usage and this transformation has been attributed to the imposing genius of gentle Shakespeare. But the time has come to take new soundings in the social upheavals of that troubled 16th century. The Reformation turned society upside down and inside out, and perhaps layers of the community, formerly inarticulate, where the fairies had always been beloved rose to the top and through Shakespeare and others made their voices heard.



Fig. 5 FAIRY RING, *after* OLAUS MAGNUS.

PLATES XV, XVI, XVII



PLATE xv. Hieronymus Bosch. The Hay Wain. Central Panel. *Madrid, Prado Museum.*



PLATE xvi. Hieronymus Bosch. The Hay Wain. Detail. *Madrid, Prado Museum.*



PLATE xvii. Hieronymus Bosch. *The Hay Wain*. Detail: Boletus. *Madrid, Prado Museum*.

4 THE 'POGGE' CLUSTER

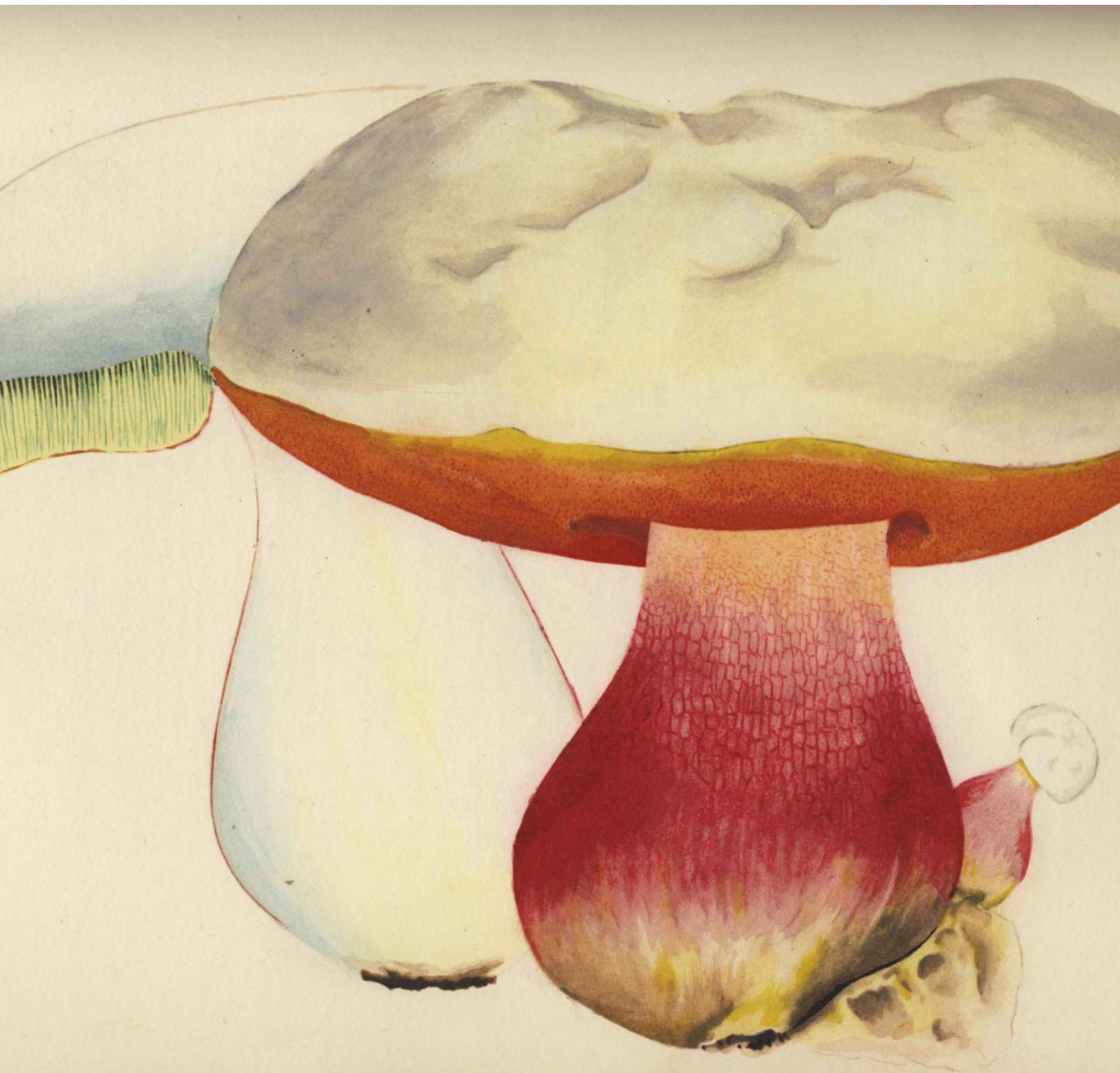
Just as we turned to the Breton word *tousec* for a clue to the inner meaning of 'toadstool', so now we invite our readers to look with us at the Low German word *pogge*, meaning frog or toad, and ***poggenstohl***, 'frogstool'. *Pogge* exists in many a dialectical variant: *pogg*, *pagg*, *pugg*, *puck*, *pook*, *pauk*, *poch*, and *puch*.

One of the daring labors of modern philologists has been the reconstruction of the original Indo-European roots that lie behind our modern vocabularies. With the known vocabularies of some scores of languages, living and dead, to go by, they work back along converging lines of evolution to discover, as closely as the evidence permits, the roots that were current perhaps four thousand years ago, before the linguistic unity of our ancestors broke up. These reconstructed roots cannot of course be tested against actual usage, nor is it remotely possible to document the history of their verbal progeny back to them in a way that would constitute proof by the exacting standards of the etymological discipline. It is also true that different philologists working from the same evidence arrive sometimes at different reconstructions of the root, but often there is a consensus, and even if we consider the results only tentative and approximate, these hypothetical Indo-European roots serve, if cautiously used, to associate together significantly large clusters of words. The philologist of our time who has devoted his life to this work is Julius Pokorny. In his latest revision of his *Indogermanisches Etymologisches Wörterbuch* he presents an important root that he represents thus: b(e)u-, bh(e)u-. It means to swell up, to puff up, to fill with wind, to inflate or expand or distend, and in origin it is imitative.¹

Among the many words that Pokorny traces to this root is our Low German *pogge*, meaning frog or toad, and the semantic link here is clear. Of the aspects that the frog or toad presents to the human senses, two stand out, one aural and the other visual: the croak, and the astonishing distension of the creature with air in the act of croaking. A frog or toad suggests the idea of a sac that lends itself to gaseous distension. From Pokorny's root we derive also our English 'poke', meaning a bag, and 'pocket', and the French *poche*. To the same family belongs the Anglo-Saxon *buc*, meaning 'belly' and also any bellied container such as a pitcher. To these we would venture to add a curious trio of English words, the obsolete 'pung' and 'bung' and the Scottish 'spung', all three meaning 'purse', words that picked up somewhere along the road a nasal infix,

I. Pokorny offers two additional, somewhat similar roots conveying the same meanings: (i) ba^xb-, bha^xbh-, pa^xp-; and (2) ba^xmb-, bha^xmbh-, pa^xmp-, pha^xmph. See first two fascicles of his revision, published in Bern in 1949. The possible kinships between these three roots need not concern us.

PLATE XVIII Jean-Henri
Fabre. Boletus Satanus Lenz.



THE 'POGGE' CLUSTER

as the philologists say. In Swedish *pung*, meaning 'pouch', is in current use.¹ There exists, we believe, abundant evidence that latent *inpogge* is the metaphor of an inflatable sac. In the eastern part of the Dutch province of Gelderland, the same word *pogge* means, not a frog, but a young pig, a creature notorious for its fat rotundity.² The same figure of speech underlies the words for 'toad' in other languages. Thus *bufo* in Latin suggests the blown-up cheeks of the buffoon. In ancient Greek a kind of toad that was said to puff itself up to bursting and to exhale a poisonous breath was the *cpuaaXoc*, a word derived from *cpDasc*, meaning a bellows, a wind, a blast, a breath; and it is related to a Greek word for bladder and bubble. In the Tosk dialect of Albanian, a toad is a *thithelope*, or 'cow's udder', *thithe-* being the udder. The inflated pouch of a toad suggests an udder. Now we turn to the Irish language, and here our wild fungi re-enter the scene in a strange blending of metaphors already familiar to us. In Irish there are two words for a bag or pouch, *bolg*, which is related to the Latin *bulga*, and *puca*, which was probably borrowed between A.D. 800 and 1050 from Scandinavian sources. They are two further examples of words belonging to the family of our familiar Pokorny root. In Irish one way to refer to a wild fungus is *bolg losgainn*, literally 'frog's pouch', and another *wayis pucan beireach*, 'heifer's pouch'. If the 'heifer's pouch' refers to the udder, as we suppose, the same figure of speech that in Albanian means 'toad' turns up in Irish meaning 'toadstool'. In Irish, *bolg seidte*, 'blown-up bag', is a term for the puffball. It is easy to see why the fungi figure in all these metaphors: puff balls, toadstools, all the wild fungi of forest and field, impress the visual sense as creatures that quickly swell up.³ Francis Bacon in his *Sylva Sylvamtn* described the puffball as a 'cod, or bag'; in Bacon's time 'cod' meant both 'pouch' and 'scrotum'. In Latin *bulga* was a humorous metaphor for the womb, and the bagpipe down through Renaissance times was a symbol of lust and wantonness.⁴ In Slavic our Pokorny root erupts directly in to the fungal vocabulary. An

1. High German *Pocke*, English 'pock' and 'pox', the erupting pustule, belong to the same verbal family. It has been suggested that Low German *pogge* means the 'pock-marked one', rather than the 'bag'. But this is belied, as we shall see, by the metaphors latent in other languages and dialects. Furthermore, the principal meaning of *pogge* is 'frog', and the common frogs of Central Europe, unlike toads, are free of warts and pustules. The usual words for 'toad' in Low German are *padde* and *utze*.

2. For this information we are indebted to Professor G. G. Kloeke, of Leiden, who refers us to his *Taalatlas van Noord- en Zuid-Nederland*, Lief, n, 1, in the 'Ferkel' chart.

3. For hobgoblin there are words in Manx, *boag*, *boagdne*, and in Irish, *bocdn*, that seem to belong to the same family, though the kinship is obscure. They recall a cluster of Irish words for mushrooms - *beac* and its diminutives *biocdn* and *beacdn*. Perhaps Irish scholars will tell us whether these fungal words do not also harbor ideas of sprites and of bellies, and thus link them with our *pogge-duster*. There is an Irish term, *beacdn bearaigh*, which on its face would seem to mean 'heifer's mushroom', but underneath the surface is it not analogous to *pucdn beireach*, 'heifer's pouch', and parallel in meaning?

4. For a discussion of the erotic associations of the bagpipe as found in art and literature, see Edward A. Block's 'Chaucer's Millers and Their Bagpipes', *Speculum*, April 1954, pp. 239 ff.

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ancient word for 'mushroom' survives in the Czech *bedla*, in the Polish *bedla*, and in *bhtza*, a term reported in certain parts of Russia. From these words Roman Jakobson reconstructs the hypothetical *bii-dla* for primitive Slavic, descended in its turn from our Indo-European root, with the addition of the Slavic instrumental suffix *-dl-*. The philologists link these Slavic words with an Indie word meaning 'bubble', wherein the idea of the swelling sac recurs in purest form.

We have pursued our Low German *pogge* on the humble and earthy level of toads and frogs, udders, bags, and fungi. But the underlying metaphor, keyed to gaseous distension and gaseous collapse, lends itself to images on a wholly different plane, and our same Indo-European root proliferated verbal progeny in the incorporeal world, the world of imps, sprites, and goblins. Here we find our 'spooks', and Shakespeare's Puck, and Kipling's '*Puck of Pook's Hill*', malicious forces of the unseen world, unaccountable, like Hamlet's ghost *hie et ubique*, the bugbears and bugaboos of cowering minds. In Irish, *puca* circulates as two distinct words, meaning 'bag' and 'sprite', though in our opinion they are etymologically and metaphorically identical. The Pooka of Mary Chase's play *Harvey* is a wise but mischievous spirit, an imaginary rabbit blown up to more than human size. In English 'puck' refers only to imps, but here, as in Irish, we find it associated with the fungal world, for 'puckfist', now fallen into disuse, was once a common name for the puff ball. The second element in the word, '-fist', meant a silent expulsion of hind wind, and so a puffball was an imp's flatus. In Russian a 'flatus' is a *puk*, riming with juke', and the word is another of our *pogge* cluster intimately linked with a family of Russian words relating to gaseous distension, swelling, bursting, ripping open; but the Russian word is not associated with fungi or amphibians.

Like the weaver's threads shuttling in and out in warp and woof, we have seen how words and meanings play hide-and-seek: frogs and toads are inflatable sacs, and these are sprites, and bags and sprites are fungi. Today the meanings are compartmented, their latent metaphors forgotten. But there was a time when the metaphors were living, the words fluid. We have said that 'puckfist', referring to a puffball, meant an imp's flatus. Did it once, long ago, mean 'toad's flatus'? There is no evidence in surviving English documents for this. Yet we know that the toad was the habitation of the Evil One. We know that in the southwest of England toadstools to this day are called 'pixie-stools', with a puckish pixie thus doing service for the toad.¹ We know more: the

i. Richard C. A. Prior pointed this out close to a century ago in his *On the Popular Names of British Plants*, London. He also suggested an etymological tie between 'puck' and *pogge*. See entries under 'pixie-stool', 'puckfist', and 'toadstool'. We consulted the edition of 1879.

THE 'POGGE' CLUSTER

language closest to English is Frisian, and in the dialect of Frisian spoken on the island of Terschelling the puff ball is called the *podde-fyst*, toad's flatus, and in the neighboring island of Schiermonnikoog it is the *pare-puster*, toad's puff. But the association with imps is also not absent from Frisian, for in the town of Dokkum the puffball is called the *spoekbal*, or 'spookball'. With what regularity the semantic themes recur! In German we face a pretty problem: the puffball is *theBovist* or *Bofist*, and in Low German we *fmdpofist*: the second syllable in these words is clear, but what idea hides behind the first syllable? No one knows, but we think it is safe to assume that it meant either frog or toad, or an imp, or a sac, or a puff, or a blending of these. And whichever it was, behind it lay the primal idea of a gaseous swelling, an exhalation; and emotionally, all of these terms connoted something vile.

In the first stage of our 'toadstool' pilgrimage, we identified what we call the poison-cluster of toad and fungal words. Now we have gone on to identify the *pogge-cluster*, wherein, through the mediation of the evil spirit with which both toads and fungi were felt to be instinct, we find these lowly creatures linked together verbally in the untutored minds of early men inhabiting the dank forests of northern Europe from Ireland to Russia. Here we discern the deep folk associations that caused and expressed the mycophobia of the Celtic and Germanic peoples. In the Mediterranean world, a kindred idea of the breath, the exhalation, gave rise to metaphors of the loftiest associations - the Holy 'Spirit' and Divine Imp/ration. In Russia the word for the soul - *dushd* - flows from *dukh*, the word for breath. But by an initial turning in the wrong direction, the metaphorical use of gaseous distension and exhalation in the world north of the Alps reduced the Holy Spirit to a sprite, and the Divine Afflatus into an imp's flatus. The northern metaphor was keyed to frogs and toads, and they to swollen fungi, and both to the Devil.

Earlier we saw how toads and fungi and venom executed a kind of triangular measure in the minds and words of the peoples who dwelt on the shores of the North Sea. Against the vaster background of a still more ancient world, we have seen how a common idea underlay the words for things as disparate as toads, sacs, fungi, and imps, and how meanings and metaphors criss-crossed in the figures of an antique quadrille. The poison-cluster of words was superimposed, so to speak on the *pogge-cluster*:. In France the toad and the Devil coalesce, with fungi joining the company.

We have seen that an Irish expression for the mushroom is the frog's pouch, *bolg losgainn*. *Bolg* is cousin to the English words 'belly', 'bulge', and 'bilge'.¹

I. The Irish chronicles refer to the aborigines of Ireland as the *Fir Bolg*, 'pouch men', of which the meaning is

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('Bilge' is the ship's belly where bilge-water collects.) *Bolg* also means belly or womb, bag or pouch or pocket, bellows, bladder, pimple, blister. It is kin to the Latin *bulga*, which meant a leathern pouch or reticule (in lieu of the pockets that the Romans did not have) carried over the forearm, a word that the second century lexicographer Festus traced to an origin in Gaul. It is the same word as the French *bouge*, which has had a succession of meanings down the centuries - a concavity, a dump, a miserable habitation, the belly of a cask, a leathern bag, a valise. Another word of the same clan is 'budget', that most distended of all wallets, always 'bulging'.

If, as we have seen, frogs and toads were often called 'pouches' or 'bags', then by a reverse semantic transfer, we might discover that on occasions some word for 'toad' that had no semantic or etymological kinship with the *pogge-clustei*: might be used for a pouch or wallet. The word for pocket in High German today is *Tasche*, and we can trace it back to Old High German *tasca*, where the trail is lost. The Italian *tasca* means a pouch or wallet. Some have considered the Italian word distinct from the German, but no satisfactory etymology has been found for it either. We now put to the philologists the question whether both the German and the Italian words are not simply our old friend *tosca*, the Anglo-Saxon word for toad. We are not obliged to assume that *tosca* or *tasca* in the sense of toad was ever current in Old High German: it could have been borrowed in the Old High German period (not earlier than about A.D. 800) from some other area where *tasca*, meaning toad, had already taken on as a second meaning the sense of *bulga* or wallet. Nor was it borrowed necessarily from Anglo-Saxon, of course, since the area where this word circulated in various forms was much more extensive; just how extensive we do not know. There could have been, for a time, a style of *bulga* - a leathern scrip hanging from the forearm - designed to imitate a toad, and a term that began as a nonce-word could have struck permanent root in Germany and Italy.¹

obscure. *Bolg* here may be related to *bog*, an Irish word meaning 'soft', and to the Irish words *began* and *bogac*, 'bog', 'quagmire'. Cf. the undoubted etymological kinship between German *Schwamm*, 'mushroom', and English 'swamp'.

I. The presence of a in both the Italian and Old High German words reminds us of the Anglo-Saxon variant *taxe* (see p. 75, footnote), and lends weight to Victor Henry's suggestion that confusion arose in Latin between *toxicum* on the one hand and *taxus*, *taxicus* on the other. Our suggested etymology might be valid for Italian *tasca* even if invalid for the Old High German word. This brings us to an obstacle in the way of our theory that philologists will quickly bring up. The authorities cite an Old Saxon word *dasga* meaning 'pocket'. This would correspond by normal transition to Old High German *tasca*, and the pair of words would point to a purely Teutonic root. But the Old Saxon word appears, not in a text, but in a gloss; see J. H. Gallee's *Altsächsische Sprachdenkmaler*, p. 287, 11. 26-27. The source is there given as a Karlsruhe ms. that is not further identified. An exhaustive examination of all the evidence supporting the existence of Old Saxon *dasga* needs to be made. The gloss may reflect a false back-formation from the Old High German word, a pedant's error; or it could be a copyist's misreading. In addition to the doubtful Old Saxon form *dasga*, there are various citations of an Old High German form *dasga*.

5 PUFF BALLS, FILTH, AND
VERMIN

A/Lore names are reported in English for the puffball than for any other kind of mushroom. There is the fanciful 'devil's snuffbox', which recalls the corresponding *chortova perechnitza* or 'devil's pepperpot' of the Russians. There is 'frogcheese', designating the young puffball before it dries up. There is that curious word 'bunt', now dying out. In the Oxford Dictionary it follows hard on another word, identically spelled, that is defined as 'a swelling, a pouch- or bag-shaped part of a net, sail, etc.', and both words are put down as of unknown etymology. Surely, from the swelling growth of the puffball and the many associations of the fungi with the idea of pouches and bags and swellings, we may regard these words as one.

However, in England and throughout western Europe the distinctive association of the puffball is scabrous. 'Puckfist' is the English archetype, whence depend a number of variants: puff-fist, bullfist, fistball, fuzball, pixie-puff, and finally the cleansed and devitalized survivor of the lot, our puffball, of which the bad-smelling origin is lost almost from memory. In human speech as in the physical world there operates a law of entropy that saps the strength from once virile metaphors, until only bookworms (ourselves perhaps devitalized!) detect and relish with rarefied connoisseurship the faded flavors that have lain stale for centuries. 'Feist' was the word once commonly used for the silent flatus; it and the noisy 'fart' are simply different phases or 'grades' of the same word, etymologically identical. ('Feist' rhymes with 'enticed', but in 'puckfist' the V is short.) They correspond respectively to the French *vesse* and *pet*. Just as the Latin *p* of *pater* corresponds to the 'f' of 'father', so the *p* of the French verb *peter* in ah¹ likelihood corresponds to the 'f' of our English words. One of the famous creations of the French pastry-cook is the *pet de nonne*¹: here in this single term, as in a capsule, the spirit of Gallic humor was caught, though today it trips off the tongue of Frenchmen with no thought of its pristine flavor. A French wine that is *petillant* is one that fizzes slightly, and originally 'to fizz' was the English verb that corresponded in scabrous meaning to the noun 'feist'. In the beginning the *petard* was an enormous *pet*, and he who is hoist by his own petard is the victim of a peculiarly personal rocket action such as Hieronymus Bosch actually depicted in his *Last Judgment*.

The metaphor of the silent flatus appears to have attached itself to the puffball

i. Cf. Dutch *hoerendrcetje* and *nonnenfortje* for similar delicacies, words that, if literally rendered, would shock the English ear and turn the stomach.

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in earliest times, before the linguistic break-up of the Indo-European peoples. For the English, as we have seen, the puffball used to be the puckfist or imp's silent flatus. In French it is the *vesse de loup*, or wolf's silent flatus, and similarly in Dutch, *wolfsveest*; and in Danish the sources give the corresponding *ulve-fis*, but this is not a drawing-room word. Some Frisian islanders speak of the toad's flatus, but the more common Frisian term is *ulefyst*, or owl's flatus, which may be traceable to an erroneous popular rendering of the Danish term. In Russia the genteel name for the puffball is the devil's pepperpot, as we have seen; but there circulates an earthier term, *bzdjukha*, the silent flatus. The Basques speak of the ass's flatus, *astaputz*; and in Romansch we find in the Engadine, wolf's flatus, *toffas d'luj*, and in the Surselva, *cacs tgapper*, or crow's droppings. The mushroom manuals report *cuesco de lobo*, wolf's flatus, for the Spaniards, and we ourselves report *pedo de lobo* in use in the Castilian countryside. The standard name in Italian is *vescia di lupo*, but in the Trentino dialect we have *slofa*, which is a low word for the *membrum virile*. In Catalonia we find *pet de Hop* and *pet de bou*, wolf's flatus and ox-flatus, this latter paralleling the English bullfist. By far the most interesting of all, however, are two other Catalan terms: *bufa del diable* and *bufa del dimoni*. *Bufa* like 'feist' is a silent flatus, and so in both these Catalan expressions we find exact equivalents of the obsolete English puckfist. But the ramifying interplay of semantic and phonetic associations does not stop there, for in the Catalan language *bufa* also means 'bladder' and a cluster of kindred things, and this transports us at once to the maze of meanings that we found clinging to the Irish *puca*, the Latin *bulga* and its derivatives, and indeed the whole cluster of *oĕpogge* words. In Irish, according to a reliable source, the puffball is *cos-a-phouka*,¹ 'Puck's foot', which reminds us of the Old French word, *le bot*, meaning both Satan and 'toad'.

In the puffball vocabulary we discover a subtle interplay of sounds and meanings, where strict etymologies are lost in a common pool. The idea of the devil underlies all-in pixie and puck and the *diable* and *dimoni* of the Catalans; and, as it were behind a mask, the Evil One is hidden in toad and wolf, those creatures steeped in terrible folk associations. The owl of the Frisians is an evasive substitute for the wolf, and the crow of the Surselva may hide, through translation and metamorphosis, the German *Krote* or the French *crapaud*. In addition to the devil, the scabrous exhalation of gas is everywhere - in feist, fuzz (i.e., fizz), puff", *vesse*, *pet*, *bufa*, and behind the euphemistic face of the bull and *bou*, and probably behind the enigmatic *Bo-* of *B0f zSL'Ball* in 'puffball'

I. See A. B. Steele, 'Fungus Folklore', in *Transactions of the Edinburgh Field Naturalists' and Microscopical Society*, vol. 2, 1887, pp. 175-183.

PUFFBALLS, FILTH, AND VERMIN

is a happy dilution of the same theme, an acceptable alliterative substitute. In 'puff' there is the phonetic overlap with 'puck' and the semantic overlap with 'feist'. Like those modern clutches in automobiles that move imperceptibly from speed to speed, the peoples of western Europe, when they speak of the lycoperdon, slip from sound to sound and metaphor to metaphor, under pressures of primitive tabu and the modern sense of propriety. On this phenomenon suggestive of punning the scholars bestow the name of paronomasia. There is in our case a pool of sounds and a pool of meanings and a pool of evasive substitutes, mingling together in step with the pulsation of underlying ideas and emotions. Our own inquiry is keyed to the association of fungi with toads, and here there remains one notable observation to add. So far as we know, *bufa* has never designated the toad in Catalonia. But phonetically and semantically (because of the toad's aptitude for prodigious inhalation of air and exhalation), the Latin *bufo*, meaning toad, and the Catalan *bufa* are close kin, and etymologically, though neither is derived from the other, they must both spring genetically from the same verbal tree. Thus there is a further strange analogy between 'puckfist' and *bufa del dimoni*: 'puck' and *bufa* mean 'imp' and 'feist' respectively, but in addition each is pregnant, so to speak, with the latent idea of 'toad'.¹

Our survey of the puckfist names has been confined to the Indo-European peoples and Basques, and chiefly to Europe. Think of the horizons for research that open up when we ask ourselves what metaphors are used for the puckfist elsewhere in the Eurasian land-mass, and then in the other continents. What a field for scholarly enterprise is here, and how learned and mad must that inspired scholar be, after the manner of a Norman Douglas character, who will devote himself to this pursuit, his journeyirigs and questionings to be financed of course by some noble Foundation with a nose for the more subtile cultural aromas!

Throughout the puff ball world there is present one element that we did not find in the *pogge* words, and this new element is the scatological. The puffballs, which in their 'frogcheese' phase make good eating, despite this virtue are linked throughout western Europe with the filth of hindwind. And this leads us into a fresh area for exploration. The High German word for 'toad' is *Krote*, of which the etymology has defied the efforts of massive German scholarship.

I. The flatus metaphor is also found in the Panjabi fungal vocabulary: *padd bahera*, 'gall-nut flatus', is a mushroom name. The *bahera* is a tree famous in the India trade and known in botany as 'belleric myrobalan'. It yields a kind of gall-nut used in dyeing and tanning, and also in Indian medicine. It would be tempting to associate the Panjabi *padd*, 'flatus', with Dutch *padd*, 'toad', but no kinship is possible. The Panjabi word is cognate with the two English words of the same meaning discussed on p. 97.

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We dare not aspire to trace this word to its lair, but as a fresh approach to a vexed problem, we submit that German *Krote* is the same as the Rhineland word *krotz*, meaning originally the dung of domesticated animals; i.e., dung with value for the farmer. The same word appears in Flemish *krotte*, and it turns up also in the familiar French *crotte* and *crottin*, whose primary meaning was also 'dung'. Indeed, if this surmise be well received, we venture further. The French word for 'toad', *crapaud*, is certainly not related etymologically to any root meaning dung, being akin to the Provençal word *grapal*, but the precise shape that this word has taken in modern French seems to be traceable to popular pressures that seek to associate the loathsome creature and its name with *crape*, a French word whose scatological English counterpart is known wherever the English language is spoken. The Oxford Dictionary offers us a Scottish and English dialectical word for the dung of domesticated animals, 'tath' or 'tathe', which in Norwegian and Swedish dialects becomes *tad*. Do we not here find the identical semantic transfer? Perhaps we are in the presence of three doublets, the Germans referring to the toad as 'dung', the English and Scandinavians doing likewise, and the French word for toad being re-shaped to resemble *crape*. In the Danish pattern of fungal metaphors, we find that dung is an alternative to the toad in a pair of fungal words - *paddehat*, 'toad's hat', and *skarnhat*, 'dung hat'. How felicitous for our argument is the word 'cowpad', wherein the second element here means 'dung', but elsewhere as we know means 'toad'!¹ On an earlier page we considered the possibility that 'toad', a word of unknown origin, might be descended from a Celtic adaptation of the Latin word for 'poison', and certainly in Anglo-Saxon times the loathed creature was linked with venom. But on balance the Nordic *tad*, meaning 'dung', seems to us the likelier source.²

In modern English no filthier word for the fungi exists than 'smut', the name of the fungal parasite that afflicts corn. It is cousin to the German word *Schmutz*, 'dirt', and its evil potency comes out in its figurative use for con-

1. 'Cowpad' is in wide use throughout the English and American countryside, and it is therefore surprising that neither the Oxford Dictionary nor Webster's reports it; nor do we find it in Wright's *English Dialect Dictionary*. Wright reports a single citation for 'pad' in the sense of 'dried cow's dung as formerly used for fuel'. This citation is from East Anglia, and Wright declares the word obsolete.

2. Franciscus van Sterbeeck in his *Theatrum Fungorum*, Antwerp, 1675, said on p. 227 that in France a certain mushroom considered foul by him was called *la crate*. If true this would add striking additional evidence for our thesis of a common pool of words and meanings for toads, mushrooms, and excrement. We have not yet found corroboration for Van Sterbeeck's statement in French sources. Van Sterbeeck relied heavily on the great *Historia Plantarum Universalis*, 1650-1, of Jean Bauhin, who on p. 846 described a certain mushroom that he had gathered on a hill in Montbeliard called La Crotte. Did Van Sterbeeck misconstrue Bauhin's Latin text and think the name belonged to the mushroom? Professor Georges Becker, the great mycophile, is a citizen of Montbeliard, and he has confirmed to us the former existence in that city of a hill called La Crotte, razed to make way for railroad facilities.

PLATE XIX

Jean-Henri Fabre. *Lycoperdon furfuraceum* Pers. ex SchaefF.

English: *puffball*, *puckfist*;

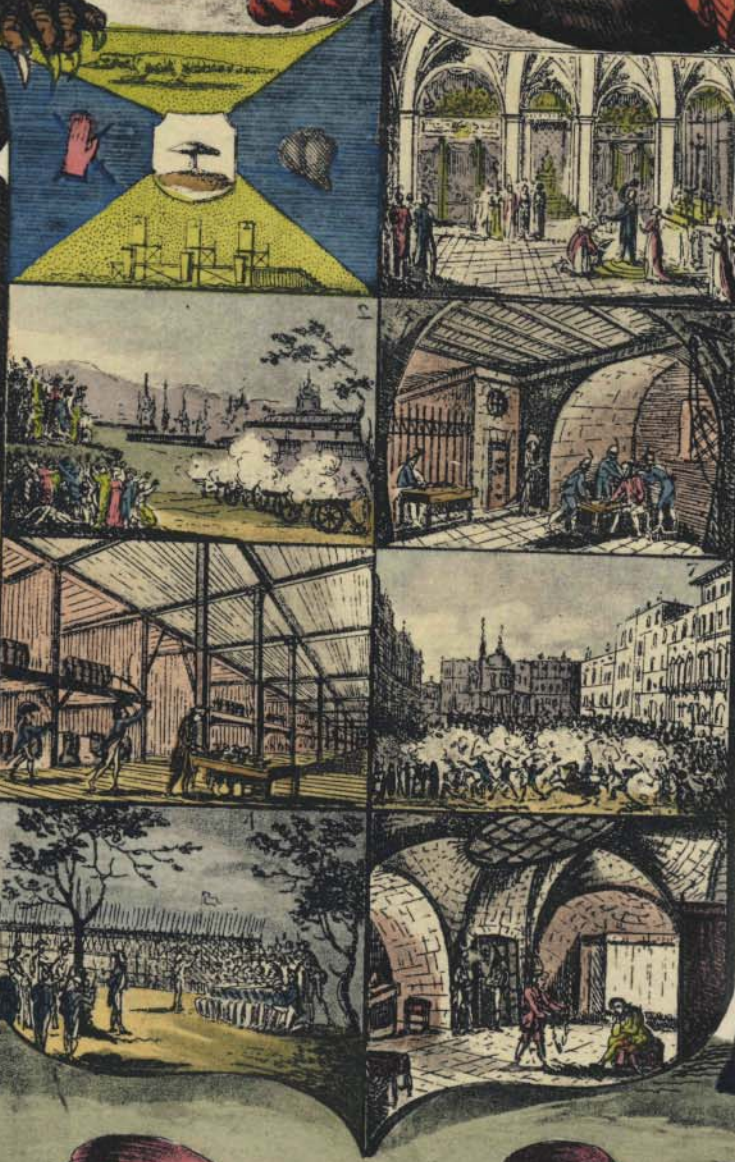
French: *vesse de loup*.



PLATE XX

Napoleonic caricature.

*By courtesy of Frank Altschul, Esq., Overbrook Farm,
Stamford, Conn.*



PUFFBALLS, FILTH, AND VERMIN

demning scabrous language. To the Englishman the two meanings of 'smut' seem so fittingly wedded that he could not imagine things otherwise. Yet the Englishman's disgust with fungal smut is an acquired cultural trait, not instinctive in the human species. The Indians of the Valley of Mexico have always considered smut a culinary delicacy. The kind they use grows on maize, and 'ustilago maydis' seems to be its scientific designation. But in the market place the Nahuatl name, *cuitlacoche*, circulates in Spanish too, and the best families of Spanish descent delight in eating *cuitlacoche* prepared in a variety of ways. Moreover, when English-speaking guests taste the *cuitlacoche*, perhaps served like *piroshki* with cocktails, it moves them to rapture — until they discover that they are eating smut. The Nahuatl word is built from *cuitlatl*, 'excrement'. Today, as we have already said, in standard High German the toad is no longer linked with the fungi, though traces of this association survive in Pennsylvania Dutch. Yet in the German mushroom manuals we occasionally find *Krotenschwamm* as a common name for the poisonous *amanita pantherina*. Perhaps this is one of those mushroom names that circulate only in manuals. But the same word applied to the same species appeared in the treatise on mushrooms by Carolus Clusius published in 1601,¹ and we suspect that it was current in his day. If so, and if we are right about the source of *Krote*, it follows that toads and dung were intermingled in the minds of simple Germans, and both were linked with fungi in *Krotenschwamm*. If we have successfully recaptured the semantic associations and feelings of the people who used these humble words, then here we discover a very citadel of mycophobia, where toads and fungi with loathing were spewed forth on the dungheap. Against this background, it becomes clearer that 'frogcheese', 'toadsmeat', and the Welsh 'toad's cheese', as well as the French *pain de crapaud*, hark back to excretions of toads, rather than to food that toads were supposed to eat. We have seen that the Surselva countryman thinks of puff balls as the droppings of crows. R. C. A. Prior in his treatise on English plant names, published almost a century ago, suggested that the stool of 'pixie-stool' referred to the devil's droppings.

I. His *Rariorum Plantarum Historia* (Antwerp) contained a section on mushrooms of Hungary. Clusius was Charles de Lecluse, a Frenchman of Arras. He is sometimes called the father of scientific mycology. *Krotenschwamm* has appeared recently in the *Kleiner Pilzatl* of H. Strohschneider, Vienna, 1948, p. 22. We have discovered no modern citation of the word in High German other than in mushroom manuals. Clusius' work was a treatise on the mushrooms of the Pannonian plain (Hungary) and he gives *Krottenschwammen* [sic] as the German name of the mushroom (*amanita pantherina*) that in Magyar was called *bagoly gomba*, or 'owl mushroom'. Thus the German word was certainly not a translation out of the Hungarian. Clusius also reports *Froschemtuel* [sic] as the German name for another mushroom. Here he may have been translating the Low German *poggenstul*, thus spelled by Valerius Cordus in the middle of the 16th century when he called it to the attention of the learned world in his *Adnotationes* on Dioscorides. Our own view is that these words were still current, though disappearing, in standard High German in the time of Clusius; that they have long been obsolete; and that the compilers of manuals retain them by oversight.

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He was mistaken, but doubtless in the long course of English speech there have been others whose mycophobic thoughts turned to dung as they spat out the expletive 'toadstool'. When the English caricaturist devised a satirical coat of arms for Bonaparte, his symbol for the Corsican Devil was a toadstool, and it sprang from dung, the lineage that he thought befitted his villain. True to the Englishman's unfailing ignorance in fungal matters, the artist did not limn a deadly species, or even a fly amanita, as the reader will observe in the reproduction of this old print that we present.

Some years ago an episode took place in France that was curious for various reasons, and not least because it linked birds' droppings with mushrooms. On Sunday, January 6, 1926, in the village of Bombon (550 inhabitants, eleven miles from Melun in the Department of Seine-et-Marne) the beloved and respected cure of the parish church, the Abbe Desnoyers, 50 years of age, had retired to his sacristy after Mass when twelve persons, ten women and two men, strangers to the community, burst in upon him, seized, gagged, and bound him, threw him to the floor, and proceeded to flog him with knotted cords until he almost fainted. A few minutes later the twelve assailants quietly submitted to arrest. It developed that the twelve had come by car all the way from distant Bordeaux, that they were members of a religious circle known as the Groupe de Notre-Dame des Pleurs, that they were the disciples of the founder of this little sect, one Madame Marie Mesmin, formerly a concierge, and that they attributed Madame Mesmin's bad health to spells cast upon her by the Abbe of Bombon across hundreds of miles of intervening countryside. One of the two men, the street-sweeper Maurice Lourdin, at the Magistrate's hearing on January 24, had no trouble in identifying the Abbe Desnoyers as Satan himself, one of the most powerful sorcerers of the age. Only by flagellation could the demon that possessed this priest be exorcised. Lourdin bore witness that the priest of Bombon had sent birds (we are not told the species, alas!) to Bordeaux carrying diseases. They had flown over Madame Mesmin's garden, and from their droppings had sprung up a crop of fungi that took obscene shapes, whose appalling stench had smitten all and sundry with horrible diseases.¹ For a brief spell the Parisian press was agog with amused excitement about the happening in Bombon, and cabaret singers made much of it. Thirty years have passed, but

I. There may be an echo of the same association between birds' droppings and fungi in a curious theory advanced to explain fairy rings by a Mr. Johnson of Wetherby, England, early in the 19th century. He thought they were caused by starlings which "when in large numbers frequently alight on the ground in circles, and sometimes are known to sit a considerable time in these annular congregations". This reference is to be found in the edition of Gilbert White's *Selborne* annotated by Captain Thomas Brown, of which the first printing appeared in 1833, on p. 327.

PUFFBALLS, FILTH, AND VERMIN

there are those who still remember it: Aldous Huxley has recalled for us one of the refrains:

Frappons, frappons, en union
Sur le Cure de Bombon.

The account of this anachronistic episode can be found in *The Times* in the issues of January 6, 7, and 25, 1926. The obscene fungi could only have been stinkhorns. *The Times* correspondent did not remark on the number of the assailants: twelve. With Madame Mesmin their leader, this made thirteen, the full complement of a witches' coven. We seem to be in the presence here of the posthumous twitchings of witchcraft, the religion of the Horned God, and of the folk association of fungi with excrement.

In the Italian language there is a word to designate a venomous snake, *scorzona*, which is etymologically identical with one of the Spanish words for 'toad', *escuerzo*. The Basques, as we have seen on page 78, sometimes call the marasmius oreades the 'Viper-fungus', *suge-perretxiko*, and sometimes the *zapo-perretxiko*, or 'toad-fungus'. According to Clusius, in the 16th century two innocent kinds of mushrooms bore in German the name of *Natterschwamm*, or adder-fungus,¹ and the Magyar term was a translation of this - *kigyo gomba*. Traveling farther east, we have already called attention to the 'toad-fungus' and 'viper-fungus' of Slovakian usage. Far more important is the Russian word *poganka*, the supreme expression among the Slavs of the folk association between the fungi and vermin. In Great Russia, *poganka* is a term of condescending affection for the inedible mushrooms: the word has lost some of its sting among the mycophilic Russians. But this same word *poganka*, derived from the Latin word for 'pagan', circulates throughout the Slavic world, and in one region or another it designates not inedible mushrooms but all things unclean: mice, rats, snakes, pimples and other organic swellings and tumors, and (in Serbia) dung. The inedible mushrooms are unclean, they are vegetable vermin, so to speak, and the word used for them was also transferred to all other vermin and filth. The presence of pimples and tumors among these meanings arrests attention, for here we hark back to our familiar theme of the *pogge* cluster.

Farther east, in the Indo-Aryan world of Asia, the theme of the serpent recurs in the fungal vocabularies of various peoples, but there is no trace of the toad. The oldest figure in the fungal metaphors of these Eastern peoples is neither the hat nor the stool, but the parasol - Sanskrit *chattra*. Perhaps the

1. *Natterschwamm* is unrelated to the 'natterjack' (vide p. 74); the English equivalent of *Natter* drops the initial letter to become 'adder'; by contrast, what was originally an 'atterjack' in early English added an initial 'n' to become the 'natterjack'.

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earliest surviving reference to mushrooms in Sanskrit, going back several centuries before Christ, is *ahi-chattra(ka)*, 'snake's parasol', in the text called *Nirukta*. The same word is found in Pali, and in the Hindi *sap ki chain*, all with the same meaning; and also the Persian *catr-i-mar*. Another Hindi word for the fungi is *sap kiroti*, 'snake's bread', and a Sindhi expression is *sapido*, a diminutive of *sapu*, 'snake'.¹ It is curious that elsewhere than in the Indie languages we find the 'parasol' figure applied to fungi only in the Spanish dialect of Jocotan, Guatemala, as we mentioned earlier: *sombrilla de sapo*, wherein *sapo* means 'toad' and not 'snake'.

I. This Eastern word for 'snake' recalls the Spanish word for 'toad', *sapo*, and suggests an analogy between this pair of words and the alternative Spanish word, *escuerzo*, 'toad', with its Italian cousin, *scorzona*, meaning 'viper'. But the Spanish *sapo* and its Eastern homonym are not directly related to each other. The Spaniards could have borrowed the Eastern word only from the Spanish Gypsies, who in fact use it in the sense of 'snake'. However, the Gypsies did not arrive in Spain until the 15th century, and the Spaniards were applying *sapo* to the toad long before then. We find the word in Don Juan Manuel's *Libra del Caballero et del Escudero*, written at the beginning of the 14th century. The Hindi word comes down from the Sanskrit *sarpa*, and 'serpent' belongs to the family.

6 THE SPONGE

CLUSTER

Now the moment has arrived to examine the basic fungal words of Europe. The tie that joins toad and fungus continues to be our theme. But for a few paragraphs we shall immerse ourselves in evidence that may seem remote to our readers - if readers there be who are still with us. Some of that evidence is well attested, but we are going to advance certain conjectures of our own, and if perchance these survive competent scrutiny, we shall have succeeded in discerning links between toads and fungi over a far wider area, and at a greater depth in time, than we would willingly have imagined when we asked ourselves, at the outset, our innocent and casual question about the lowly toadstool. As amateurs, we are rash in what we are about to do, and if we do not constantly qualify our probing remarks with locutions of modest timidity, this is to spare the reader at the cost of our inclinations.

In 1901 the eminent philologist Holger Pedersen, then a young man, brought out a notable paper¹ in which he established the etymological identity of the basic fungal words that we are about to consider, despite the disparity in their looks. They circulate in all the languages of Europe, often two or three of them in the same language. In the Germanic world we may take the High German *Schwamm* as our type; in the Slavic languages, the Russian *guba*; in the Mediterranean world there is the Latin *fungus* and the Greek *σπόγγος*, 'sponge'. Only in the Celtic languages have we found no native examples. In Germanic and Slavic the words mean both fungus and sponge. In the Mediterranean, by semantic differentiation the Greeks confined their word to the sponge, and the Romans theirs to the fungus, the Romans borrowing the Greek word for the other sense.² There is no evidence that any of these words in recorded history has ever been linked in the minds of Europeans with the toad. But there is abundant evidence that all of these words have carried, in their very core, the idea of an organic swelling or excrescence or tumor. Thus the Greeks spoke of scrofula and of the tonsils as sponges, and parallel examples are common for the other words of the group.

There is one remarkable quality that distinguishes all the words of our sponge cluster: they are emotionally neutral, by contrast with the pejorative flavor of the fungal words heretofore discussed. It is as though this whole family

1. Published in Polish: 'Przyczynki do gramatyki porównawczej języków słowiańskich', in *Materyaly i Prace Komisji Językowej Akademii Umiejętności w Krakowie*, vol. I, no. I, pp. 167-176; Cracow.

2. But the morel appears to have been called by the Romans *spongiolus*, which comes down into modern Italian as *spugnolo*.

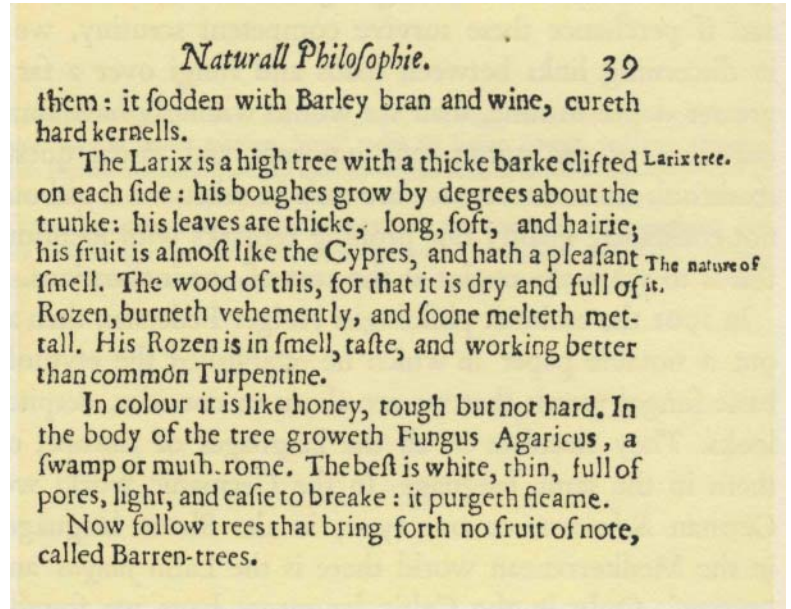
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of words had always possessed a tough underlying personality persisting through the centuries, over immense areas, among peoples in every stage of cultural development. Even when a word of this group describes something disagreeable like a tumor, it retains a detached tone, by contrast for example with 'cancer'. In the English language the Anglo-Saxons used *swamm* for 'mushroom', and this member of our sponge cluster lingered on through Middle English into early Modern English. We can pinpoint its last recorded appearance:

Fig. 6

DESCRIPTION OF FOMES
OFFICINALIS

Last reported use in English
ofswamm (misspelled *swamp*)
in the sense of mushroom,
referring to fungal growth
on larch.



in the second edition of *Naturall Philosophy or A Description of the World*, by Daniel Widdowes, published in London in 1631, where it is used in describing the fomes officinalis, the *agaricum* of Pliny. *Swamm* in the end surrendered the field to the loathsome 'toadstool', to the toothsome 'mushroom', and to the learned 'fungus'. But another word of our cluster is current in the name that the English give to wet, spongy land - the swamp. And perhaps there survives yet another word, of greater importance.

On an earlier page we saw that the idea lying behind the *pogge* cluster was a distensible sac, a bag or pocket or pouch, a belly or bulge or bilge. The English word 'womb' comes down from the Anglo-Saxon *wamb*, and this in turn is cognate with various Germanic words of similar sound and meaning, including the Gothic *wamba*. As the Oxford Dictionary points out, the same root turns up in the rare word 'gameson', designating the quilted or padded garment that medieval knights wore under their armor to avoid chafing. This garment tended to bulge and belly, being designed to do so. Philologists have been

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uncertain about the ultimate affiliations of the underlying root of 'womb' and 'gameson'. We suggest that 'womb' and our sponge cluster spring from the same source, and that in 'womb' and the sponge cluster we discover a perfect semantic parallel for those elements in the *pogge* cluster that relate to distensible bags and fungi, and also for the Irish fungal *bolg*.

Perhaps there is another extraordinary example, hitherto unidentified, of the same Indo-European root in Late Latin. During the early centuries of the Christian era the Roman legions were being hard pressed by the barbarian horsemen erupting out of Asia. In the art of warfare the innovation of the day was the cavalry, and the Roman authorities were struggling to overtake the alarming lead of the enemy in the handling of horses. Whenever they could, they incorporated into their own forces barbarian elements versed in horsemanship. It is not surprising that at this time important texts by veterinaries make their appearance in Latin. One of these veterinaries, Vegetius by name, writing in the early 5th century, describes a pathological swelling above the hoof of a horse by the adjective *gambosus*, the first recorded appearance of this word in Latin. Surely this is our familiar *gamba*, borrowed from the barbarians, used in its essential sense of 'swelling', under historical circumstances that make its appearance natural.¹ (There is a curious and significant analogy for *gamba*, in the sense that we suggest, in the modern Dutch word *hanekam*, of which the primary sense is 'cock's comb'. It carries two other meanings: it is the vulgar name of the chanterelle, and it also designates a swelling on the hock of a horse.)

The words of our sponge cluster have displayed a singular potency in grafting themselves into the vocabularies of alien peoples. Thus in Basque one of the three generic words for mushrooms is *ondo*, borrowed from the Spanish *hongo*, which in turn descends from the Latin *fungus*. (This borrowing, must have been relatively recent - in the course of the past millennium or so. Of more subtle interest is the fact that the Basque word for 'toad', *apo*, possesses as a secondary meaning the idea of sponginess. We shall revert to this.) The Magyar

I. This etymology, original with us, must stand up against the conventional one. French *jambe* and Italian *gamba*, 'leg', are usually traced through Vegetius' *gamba* to a Celtic root meaning 'bend' or 'curve'. That the words for 'leg' come from the Celtic root we do not question. It is less clear why a veterinary writing in the 5th century should refer to a swelling on a horse's leg as a 'leg' or as a 'bend'. We know that there was a close homonym for the Celtic word in Germanic and Slavic, that homonym meaning 'swelling' or 'tumor' or 'womb'. We are not inventing a homonym for our argument. If we are right, the form of the word as used by Vegetius would indicate that it was borrowed, not from Germanic, but from Slavic, and this would confer on *gamba* the distinction of being the earliest recorded loan-word from Slavic in the Western languages. Heretofore the earliest recorded Slavic word is *strava*, 'funeral banquet', used by Jordanis in his account of the funeral of Attila in A.D. 453. For the crisis in war technology precipitated by the barbarians' use of the horse, see the opening pages of Ferdinand Lot's *L'Art Militaire et les Armies du Moyen Age, Pans*, 1946.

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gomba or *gamba* was drawn from the Slavic, as was we believe the Lappish *guobbar*. In Armenian our sponge cluster turns up in *sunk*, meaning mushroom, and this Armenian word was the source of the Georgian *soko*, which in the neighboring Svanetian language becomes *sok*. On the northern side of the Caucasus the Ossetians speaking the Ironian dialect of their language borrowed their word *zoko* from the Georgians, and by a not abnormal transposition, the other Ossetians of the Digorian tongue say *kozo* - a far cry from *Schwamm and fungus* perhaps, yet genetically stemming from the same ancestry.

In the valley of the Volga, to the east of the Slavic homelands, there live the Chuvash people. They are probably the descendants of the original Bulgars. When a part of the tribe, some fifteen centuries ago, began their slow trek to the land that we now call Bulgaria, the others remained behind and they retain to this day their non-Indo-European tongue. In the Chuvash language the word for 'fungus' is *kampa*. The nasal sound in the middle of that word is of singular interest. The Chuvashi could have borrowed *kampa* only from the eastern Slavs, who for a thousand years and perhaps more, ever since the Russian language was first put on parchment, have been saying *guba*. The Chuvash word offers proof that long ago, when the Chuvash people took over the word - we cannot say when this happened - the Russian *guba* was pronounced *gomba*. Like the fly caught and held in amber, the Chuvashi have held for us the ancient and lost form of the Russian word. That Chuvash word is noteworthy also for its other meanings. It is used for certain tumors of the human body. It is also used for the genitalia of the cow, and thus recalls the Gothic *wamba* and the English 'womb'.¹

In the Indo-Aryan languages of the Middle East and India there is a startling family of words that seem both phonetically and semantically to belong to our sponge cluster. Thus in Hindi we find that *khumbi* means 'mushroom'; in Sindhi, *khumbhi*; in Panjabi, *khumb*; in Lahnda, *khumb*. These are all traceable to a Sanskrit word, *kumbhika*, meaning 'pot' or 'jar' - the bellying utensil that we have already encountered in the Anglo-Saxon *bile*, meaning both 'belly' and 'pitcher'. In Sindhi we also find *phungi*, which is seemingly a mutation by metathesis of *khumbhi*, paralleling the identical mutation in Europe, where 'sponge' and *gomba* are identical etymologically, as are *Schwamm and fungus*.

In the Waziri dialect of the Afghan language known as Pashto we find for 'mushroom' the word *xomba*, and in the Mohmand dialect *xumburi*, both derived from *xumb*, 'pot'. Surely all these words bear witness to the ubiquity of

I. Our information about the Chuvash *kampa* comes from N. I. Ashmarin's *Thesaurus Linguae Tschuvaschorum*, Book vii, p. 142, published in 1934.

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the idea that underlies the thinking about fungi throughout the Indo-European world, and of the verbal root that expresses the idea. These Eastern words stir up a further reflection. A few pages back, when we were discussing the *pogge* cluster, we saw how Puck and other imps and sprites resided in the distensible sacs, the toads, and the puffballs that we were examining. If we may rely on the Arabian Nights, the jinn of the East were confined in pots and jars, whence they would escape, rising wraith-like in gaseous wisps, to condense into organic shapes and wreak their will on men. Is there here too a common denominator in the Satanic association of the fungi, linking the East with Europe?

Up to this point we have shown the diffusion of our basic fungal words throughout the Indo-European world and among a few small adjacent tribes of other origins. How about the Semitic peoples; Here we uncover a surprising thing. Of the important words for 'mushroom' in Arabic, one is *kam* or *kam'a*. Its etymology is unknown. It belongs both to classical or literary Arabic and to the colloquial language. In its application it is both generic and specific, sometimes embracing the whole mushroom world, but also designating that species of *terfezia* which among Arabs holds pride of place as a gustatory delight. It is reported in modern Persian, where loan words from Arabic are numerous, and in its specific sense is said to be commonly used by the market vendors of Damascus. Nor is this root confined to Arabic. In the Old Testament no word for 'mushroom' occurs, but in the Babylonian Talmud and the Midrashic literature we find the cognate root KMH in both Aramaic and Hebrew forms. If our Semitic root was borrowed from the Indo-European world, it goes back far.¹ Or are both words descended from a pre-Indo-European root? Or are we dealing with unrelated words that happen to resemble each other?

Now we return to Pedersen's classic paper.² He undertook to reconstruct

1. The Arabic *kam'* suggests the Germanic and Slavic forms of the Indo-European words, rather than the Greek or Latin. In the Jerusalem Talmud we find the root SPG in the form *s'fog* meaning 'a porous luxuriant growth, mushroom, sponge', but this was undoubtedly a Hellenistic borrowing of the Greek *σπόγγος*. The parallel between the Arabic and Russian words for 'mushroom' reminds us of an astonishing parallel in fungal metaphors. A certain mushroom is called in Arabic *shahinat al-ard*, literally 'fat-of-the-earth'. This corresponds to the Russian *maslenok*, which James Collins in *The Present State of Russia* translated by 'fat-of-the-earth' in the 18th century. Yet another basic fungal word in Arabic, classical and colloquial, is *faq'*, *fuqqa'*, *orfaqqd'*, from the root *FQ'*, meaning 'whiteness'. Whether this name designates a white kind of mushroom, or whether, as in Russian and Basque fungal names, whiteness here connotes excellence, we do not know. See pp. 7 and 10.

2. Pedersen's careful and elaborate argument in favor of a common origin for Slavic *gomba*, German *Schwamm*, Latin *fungus*, and Greek *σπόγγος* seems to us conclusive, and is accepted in substance by Emile Boisacq in his Greek etymological dictionary. A. Ernout and A. Meillet in their Latin etymological dictionary suggest a Mediterranean origin for the Latin and Greek words, without however dealing with Pedersen's argument, which is available only in Polish. Occasionally there are clusters of words that the philologist ought to study together, and such is the fungal vocabulary of Europe, a semantic field pervaded by related figures of speech and emotional responses. No philologist has pursued this method. Our basic fungal words of northern and southern

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the lost Indo-European root that was the progenitor of our sponge cluster. He considered several possibilities differing only in details, and of these 'sgwombho' may be considered typical. And at this precise point, after a long absence, our toad rears its head and thrusts itself once more into the stream of our argument. Curious about the origin of the Latin word for toad, *bufo*, we turned to Walde's Latin etymological dictionary, and discovered to our surprise that philologists are disposed to consider it genetically related to the Russian word for toad, *zhaba*, through an intermediate form, *gabawo*, found in the dead Baltic language known as Old Prussian. For *bufo* Walde devises a hypothetical Indo-European ancestor, 'g^uobho'. Thus leading scholars, without regard for each other's problem, arrive at hypothetical archetypes:

[sjgwombho as
the ancestor for 'fungus' and
g^uobh⁵

as the ancestor for *bufo*, which thus differ in only one essential respect - the presence of the nasal infix in the word for mushroom! Though we are the first to propose that these two words are doublets distinguished only by the nasal infix, the Indo-European languages offer other examples that parallel ours perfectly.¹

This ancestral convergence of the two words could be regarded as accidental, provoking perhaps an ancient semantic overlap through paronomasia or punning, were it not for the weight of evidence that we have already developed, indicating an association of toads with fungi in the minds of primitive Europeans. In the face of this evidence, accident becomes the long and unlikely arm of coincidence. Perhaps traces of the underlying unity of *zhaba* and *gamba* survive in the vernacular terms of the Ukraine and Slovakia that we cited on page 78. Perhaps there is a trace of that unity, hidden behind translated words, in the Basque word for 'toad', *apo*, linked as it is semantically with both 'sponginess' and certain wild mushrooms.

According to Pedersen's analysis, *Schwamm* and *gamba* differ from the Latin *fungus* and *spongia* only by a transposition of consonants, the common pheno-

Europe possess identical semantic attributes. They mean the same things— organic excrescence, sponge, fungus. They evoke identical turns of phrase, proverbs, epithetical use. In short, the words occupy the same semantic terrain, which would be unhkely if they descended from unrelated sources. We offer this as additional evidence, circumstantial in character, in support of the Pedersen thesis. As we shall see on p. 144, this does not altogether rule out the possibility that the same root is native to languages outside the Indo-European family. In short, both Pedersen and the Latin philologists could conceivably be right.

I. The interested reader will find a detailed survey of such nasal infixation in the book of the distinguished Polish linguist Jan Otróbski, *2 Baddn ttad infikscm nosowym u> jgzykach indoeuropejskich*, published by the Polish Academy of Sciences as the 15th issue of the Transactions of its Linguistic Commission, Krakow, 1929.

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menon known as metathesis. Thus *gamba* becomes [*s*]pongos in Greek. Pedersen chose to reconstruct his Indo-European archetype, the hypothetical 'sgwombho', from the northern forms. But was he justified in this; The northern forms have shown themselves fluid throughout the fifteen centuries of their recorded history. The Greek σπόγγος attested in Homer, has displayed a notable stability throughout the twenty-five centuries of its recorded history. May we not suppose that the Greek word is nearer to the archetype? If so, we suggest our own reconstruction of the hypothetical root:

(s)p(h)ong-

And at this point the attentive reader will perceive that we are back in the company of those words that we associate with the Low German *pogge*, meaning 'frog' and 'toad', the essential difference being the nasal infix that distinguishes all words of the sponge cluster.

And so we now emerge from our arduous excursion among the words of the sponge cluster with a theory of our own. We believe that these words - *Schivamm*, *gamba*, *fungus* σπόγγος - stem from the same genetic root as the basic word 'womb', and that all these stem from the same genetic root as the words of the *pogge* cluster. That root was imitative in origin, and keyed to the idea of swelling. The progeny of that root has peopled the vocabularies of Europe with numerous words embracing bags, pockets, toads and frogs, imps, tumors, mushrooms, wombs, and sponges.

Just as physicists discover the 'unified field' where, at great depth, the disparate phenomena of matter and force turn out to be one and the same, so in our linguistic pursuit we may have arrived at the unified field underlying all of those disparate phenomena that, as we have seen, men associate together, subtly and half unconsciously, to this very day.

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About the things that man eats he is acutely sensitive. The mere thought of inviting food starts up his salivary glands, and puts him on tiptoe of eager expectation. By contrast, the suggestion that he consume things unclean gives him a spasm of revulsion. The attitudes that we have called mycophilia and mycophobia hinge on whether fungi are considered delectable food or foul and filthy poison. But primitive man had other uses for wild fungi, and he was capable of regarding these growths from a detached utilitarian point of view without regard to ingestion. We believe this explains the neutral tone of the sponge cluster of words. These words are often bestowed on edible fungi, but they usually yield place to others in the context of food - *Pilz*, *grib*, *champignon*. If we try to see the fungi as our ancestors saw them, we may divide their thoughts and feelings about them according to the ends they had in mind:

I. INGESTION

1. As poison (a) accidental
(b) for murder
2. As intoxicant (*amanita muscaria*), and for divination
3. As aphrodisiac (including perfume)
4. As medicine-purgative, styptic, etc. (*fomes omcinalis*); for contraception
5. As food.

II. OTHER

1. As tinder or touchwood, to catch the spark and start the fire, and to keep a fire in a smouldering state.
2. To produce a stupefying smoke, effective with bees when extracting honey from the hive, etc.

Modern man, especially the urbanized literate, is almost incapable of imagining the importance to his ancestors of fungi for the making of fire. One species was especially prized for this purpose - the *fomes fomentarius*, the *amadouvier* of France, the *Zunderschwamm* or *Feuerschwamm* of Germany. But many other kinds served this purpose too, such as 'bunts' or dried puffballs, and the dry, friable innards of fungous-infested tree-stumps.

This brings us to a curious trio of English words, 'punk', 'spunk', and 'funk'. We believe all three are members of our sponge cluster, siblings descended from the Mediterranean *fimgus*- *σπόγγος* word family. All three possess one thing in common: they designate, or at some time in the past have designated,

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the shelf-fungi that serve as touchwood for making fire. This meaning is not the oldest recorded use of any of them, but nevertheless as a working hypothesis we propose that 'touchwood' be regarded as their primary sense, in which sense they circulated in humble discourse for untold centuries, accumulating derived and metaphorical meanings as time went on, until finally, when the words were consigned to paper, it was these secondary and more fashionable meanings that first achieved the dignity of writing.

Let us take 'spunk', for example. That it belongs to our sponge cluster is attested by the corresponding Irish word *sponnc*, which means both sponge and touchwood. (We find a similar semantic association in Dutch, where *zwam* means both fungus and tinder; for 'sponge' the Dutch resort to *spons*.) In the Oxford Dictionary's earliest citation of 'spunk', in 1536, the word meant 'spark'; to this day it is still occasionally so used. In 1582 it appears in the sense of tinder, and in 1665 as the name of the fungus that makes tinder. Oliver Goldsmith toward the end of the 18th century offers us the earliest known use of 'spunk' as the moral quality of mettle or pluck. Here in the word 'spunk' we have a name for touchwood that gathered to itself nobler secondary meanings derived from the spark that was the end-product of its use. The word 'spark' itself is mysterious: it is known only in the English, Frisian, and Low German languages. The question suggests itself whether it is not simply a different phase or grade of 'spunk' - touchwood in its final act of transfiguration.

'Funk' also meant 'spark' in the earliest citations, in the 14th century. We first hear of it as fungous touchwood in 1673. Half a century earlier it was being used in the sense of a strong smoke and stench, as from tobacco. This use stems back to the shelf-fungi that served to generate a stupefying smoke, to put bees to sleep when extracting honey from hives. Before modern sugars became common, honey was a commodity of notable importance, both for its sweetness and as the base for mead, and in the apiculture of the time, the part played by fungal smoke was important and a commonplace. It was natural that those who disapproved of tobacco in the early days should have first associated this smoking plant with the familiar smoke-generating fungus. The depressing moral connotations of 'funk' first appear in the 18th century: he who languishes in a funk is in a moral stupor, overcome in a smoke-cloud.

Most interesting of the three words is 'punk', which in the sense of touchwood first appears about 1707. As with the other two words, the lexicographers say that the origin of 'punk' is obscure, but they give reserved recognition to a theory that it was borrowed in colonial times from an Algonquin word, phonetically similar, meaning dust or ashes. 'Punk' is the ordinary English word for

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touchwood today, and it is *prima facie* incredible that an Algonquin term for so ancient and domestic a commodity should have swept the English-speaking world and won general acceptance late in cultural history. We think there is circumstantial evidence to show that the word was securely established in English in Elizabethan times, and this leads us directly into the strange erotic associations of our punk-spunk-funk triplets.

In the 16th century 'punk' meant a strumpet, as it still does, and what is a strumpet but the tinder that whips into flame the gay young spark allured by her favors? Let no one dismiss this figure as fanciful. For 'touchwood' the French say *amadou*, which is simply the Provençal word for 'lover'. Lovers, like tinder, are quick to take fire. The French verb *amadouer* means to coax, just as we 'coax' a fire with tinder. In modern English slang 'punk' is a contemptuous adjective for things of low quality - a natural semantic extension of the brothel word. The erotic association of 'punk' is feminine. That of 'spunk' is primarily masculine: in certain English circles and at certain levels of conversation, it is the accepted word for the seminal fluid of the human male. 'Sparking' a girl used to mean 'courting' in American slang, and the *Dictionary of American English* also records the far stronger 'spunking'. We have seen how the nasal infix of the words of our sponge cluster comes and goes, associating this large verbal family with the *pogge* constellation. If we drop from 'funk' its nasal infix, we are in the presence of the supreme erotic word of the English language. The Russian word for touchwood is *trut* (riming with 'brute'), and it is directly derived from the Russian word for 'rub'. Though *trut* itself carries no erotic meaning, it is the key to certain ancient Russian riddles where the erotic sense lies hidden. The generating of fire by the friction of wooden surfaces - a technique in which one wood must be soft and the other hard - may explain why, among the many forms that 'mushroom' has taken in English, we find 'mushrub'.

And now the thread of our argument leads us from philological clues over the threshold into anthropology, where we begin to discover the deep erotic symbolism of the mushroom world.

Throughout most of human history and down into our own times, men have usually made fire by either of two methods - by percussion, striking flint against pyrites or (in later times) against iron to generate sparks that will ignite tinder, or by the friction of wood on wood through the aid of a simple device for which the English anthropologist Edward B. Tylor devised the name 'fire-drill' in the last century. The usual fire-drill consists of two wooden members, a flat smooth piece of soft wood held horizontal, and a round stick of harder



PLATE xxi. Etruscan Mirror. Ixion on his wheel. *London, British Museum.*

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wood. The stick is pivoted perpendicularly in a notch on the horizontal face of the soft wood, and then rapidly rotated, sometimes between the hands but more often with the aid of an ingeniously disposed thong or strap or bow-string. A pulsating pressure is applied to the rotating stick, as it rotates first clockwise and then counter-clockwise. The stick by friction widens and deepens the hole in the soft wood, and fine wood-dust gathering in the hole becomes red hot, until when tinder is applied to it, by blowing the tinder catches fire. For us the interesting thing is that among the peoples who use the fire-drill, the horizontal piece of soft wood is called the 'female' and is sometimes even carved crudely to suggest a human figure, and the stick is called the 'male'. The engendering of the fire is regarded as a sexual act, and is pregnant with emotional significance and hallowed by mythological overtones.

Over the past century there have been published a number of papers by anthropologists on the methods used by our ancestors and other early peoples for kindling fire.¹ The percussion method can be traced to remote times, thanks to the survival of the artifacts employed - the flints and the irons, and the masses of decomposing pyrites used before the iron age. By contrast, the perishable fire-drill - the wooden members that by friction yield fire - must generally be studied among our primitive contemporaries, although Egyptian records establish its use in ancient Egypt. These two primitive methods for making fire, percussion and friction, survive to this day by lineal descent in our 'lighters' (the French *briquets*) and matches.

Our own interest lies in tinder, that humble but indispensable condiment in the generation of fire, the highly inflammable material, otherwise worthless, that is the nexus between the spark on the one hand and the kindling on the other. The kinds of tinder that have been used in various parts of the world are many: charred rags, lint, down, the flower stalk of the agave, dried moss, dried bark, and fungi. Many kinds of fungi have served this purpose, including ordinary mushrooms in a dried state, puffballs, and, according to the classical lexicons, the *fomes officinalis* - the *agaricum* or 'female agaricke' of the old pharmacopoeias. (While this medicinal shelf fungus could certainly have served the spark-catching function, we have found no classical text supporting the lexicons, and its value as medicine would seem to have made the humbler service unlikely, especially as it had to be imported from beyond the Bosphorus.) Down to our own times the writers about tinder have almost always been confusing in their use of fungal names: they have seldom been competent in the

i. For a recapitulation of the subject and further references, see Arthur Bernard Cook's *Zeus God of the Bright Sky*, Cambridge University Press, 1914, vol. I, pp. 325-330.

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technicalities of the industry that served the market with commercial tinder. We believe, however, that there is agreement among competent students: in medieval and renaissance times, and indeed into our own era, the best commercial tinder of Northern Europe was always made from the shelf-fungus known to mycologists as the fomes fomentarius, a species that must not be confused with the mis-named fomes igniarius. Indeed, today we know that this use of the fomes fomentarius for tinder goes back far. It has been found in the human settlements at Maglemose, on the island of Seeland in Denmark, in conjunction with flint and the remains of pyrites.¹ It has been found repeatedly in the Danish peat bogs of the same era. The Maglemose finds go back to the oldest stone age in Denmark, c. 6,000 B.C. The final ice age had drawn to a close c. 12,000 B.C., and after an interval of tundra ecology, a forest growth succeeded, including the birch trees with which invariably the early specimens of fomes fomentarius have been associated. The making of tinder from this particular fungus may well be the oldest surviving industry with a continuous history in northern Europe. We suggest as an hypothesis that this fungus was the object to which the name *Schwamm* or 'punk' in earlier forms was originally bestowed. These words dealt with the fungal world from a utilitarian point of view, not gustatory; with inedible shelf fungi, not mushrooms. This would account for the emotional neutrality of the sponge cluster of words, as contrasted with the pronounced values, negative or positive, of 'toadstool', '*champignon*', and many others. Or rather, to speak with more precision, this would account for the two distinct emotional responses evoked by mushroomic words. Where ingestion is concerned, the response, whether favorable or unfavorable, is sharp and keyed to the gustatory sense. Where fire-making is concerned, the archaic emotion that lingers on in such words as 'punk' and 'spunk' is an erotic transfer.

In ancient Greece the god of fire-making was Ixion. He hailed from Mount Pelion, a center of Helladic culture, where he fathered the Lapiths, the Satyrs, and the Centaurs, tribes that were kin to the Etruscans and that enjoyed singular repute for sexual potency. According to the myth, Ixion was bound to a great

i. The fomes fomentarius found at Maglemose was described by the Danish scholar, Dr. G. F. L. Sarauw: 'Le feu et son emploi dans le Nord de l'Europe, aux temps préhistoriques et protohistoriques', in the *Annales du XX Congrès archéologique et historique de Belgique*, i., pp. 196-226. His use of the name fomes igniarius was erroneous, as Professor N. Fabritius Buchwald, of the Kgl. Veterinær- og Landbohøjskole, Copenhagen, pointed out in his superseding papers, which in the present state of our knowledge are the latest word on our subject. See his paper on the history and use of the tinder fungus published in 1930 in *Meddelelser fra foreningen til svampkundskaabens fremme*, Copenhagen; also his later paper, written with Sigurd Hansen, on post-glacial finds of the tinder fungus, 1934, *Danmarks geologiske Undersøgelse*, IV Række, Bd. 2, Nr. n, Copenhagen. The Danish title of this paper is, 'Om Fund af Toendersvamp (*Polyporus fomentarius* [L.] Fr.) fra Postglaciertiden i Danmark'.

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wheel (the sun-wheel) and sent spinning for eternity into space because he had permitted himself to become enamored of Hera. Before this sentence was meted out, unbeknownst to him his guilt was proven by trickery: a cloud was made to condense into the figure of Hera, and Ixion did not resist temptation.

In the British Museum there is an Etruscan mirror, variously attributed to the 3rd, 4th, or 5th centuries B.C., on which Ixion is depicted undergoing his punishment. Nude, bound to a seven-spoked wheel, he is in the running posture that denotes speed. Between the spokes of the wheel we discover two designs, of which one is almost entirely lost. The scholar A. B. Cook, describing this mirror in his work on Zeus, dismissed these signs as meaningless. But it will be observed that the two designs are not components of the ornamental border. They are functional elements in the iconographic message. They possess a meaning, but what meaning? Robert Graves, who drew them to our attention, suggests that they are mushrooms. He is surely right, and if so, this Etruscan mirror offers us the earliest known representations of fungi in European art; and we observe that the role they here play is related not to food or poison but to the generation of fire. The eroticism of the design tells us a story intimately linked with the Ixion myth. On one level we see a capped mushroom representing no particular species. On another level we observe that the mushroom consists of two members, symbolizing the male and female organs of a fire-drill, and they are engaged in the supreme act of fire generation. Earlier we have suggested that certain basic words for the fungi are keyed to words for the womb. We now remind our readers that the Greek word for mushroom, Π.UXYJ?, also means the *membra virile*.¹ There are the same bi-sexual correspondences in the mushroom vocabulary that anthropologists discover in the names for the two parts of the fire-drill. The pattern that we discover on the Etruscan mirror is, we think, a pictograph symbolizing the generation of fire, the function of Ixion. This interpretation is in harmony with the verbal and semantic ties that, by independent evidence, we have discovered in Europe's mushroom vocabulary. The artist of the Etruscan mirror offers us three messages in one design - a fire-drill in the act of generating fire, a sexual performance, and the mushroom with stipe stabbing the pileus (i.e., μύκης and vulva) that is the symbol of the other two.²

The medicinal shelf fungus known today as the *fomes officinalis* used to be

1. This double meaning survives in the scientific name for certain microscopic fungi, 'penicillium' (whence the popular 'penicillin'), which like 'pencil' is derived from a diminutive of 'penis'.

2. Pertinent to our argument is a representation of Ixion on an Etruscan vase from Cuma, reproduced in A. Baumeister's *Denkmäler des Klassischen Altertums*. In this case, in place of the mushroom theme, the figure on the wheel is enclosed in a double aureole of flames.

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called in English the 'female agaricke'. This sexual attribution in one form or another goes back to Dioscorides and Pliny. The explanation that they offer for it seems a little forced. According to them, the female agaric possessed straight veins resembling the teeth of a comb, and was white and light throughout, at first sweet to the taste and then bitter - an observation that suggests a cynical view of womankind. This was the only kind recommended for medicinal use, and the description fits the fomes officinahs. The 'male agaricke', which seems to have been a term applicable to the fomes fomentarius and fomes igniarius, was brown or reddish, sticky, long, hard, and heavy. These descriptions, more suggestive erotically than enlightening mycologically, originated in the ancient authorities, but were repeated tirelessly until we find them in such English pharmacopoeias as William Salmon's *Pharmacopoeia Londinensis, or the New London Dispensatory*, London, 1682, and *A Treatise on Foreign Vegetables*, by Ralph Thicknesse, M.D., London, 1749.

We can adduce startling evidence proving the hold on the Greek imagination of the sexual associations of shelf fungi. In a 10th century Byzantine codex of Dioscorides now owned by The Pierpont Morgan Library, the section on the ἀγαρικόν is illustrated by the miniaturist, but his design bears no resemblance to the fomes officinahs! He must have been totally ignorant of it. Drawing his knowledge solely from the text with its account of the male and female kinds, he has given us two drawings inspired by the male and female genital organs! Our 10th century miniaturist may have been copying an earlier manuscript, but we know not how far back this aberration goes. Some five centuries later, in the year 1491, in the earliest printed book carrying fungal illustrations, the artist was clear and accurate in his delineation of the *agaricum* (Fig. 7).

Fungi and fire - the tie that weds these two disparate elements was indeed old, strong, and far-reaching. Consider the following additional evidence. In ancient Greece there was a mushroom that bore the name κεραύνιον. This word, like *joudre* in French, conveys the idea of both thunder and lightning, and the mushroom designated by it was therefore the 'thunderbolt-fungus'. We do not know exactly what species it was, but in Latin it was rendered contemporaneously by *tuber*, and therefore it was probably an underground growth, perhaps a truffle or a species of *terfezia*. Many ancient writers refer to the common belief that thunderbolts made this fungus grow plentifully. Galen speaks of it. Plutarch in his *Convivial Essays* devotes a table conversation to the question why thunder should engender 'thunderbolt' fungi, an essay both graceful and unenlightening. Pliny the Elder in his *Historia Naturalis*, in Book xix, is careful

PLATE XXII

Fomes officinalis. Miniature from a 10th century Byzantine
codex of Dioscorides.

*By courtesy of The Pierpont Morgan Library,
New York.*

ἡ δριμυτέραι τοῦ αἵρου ὀθρῆμομασ ἰατρομ. κατὰ πλάττω
 σομένη κολύρια ἀπὸ σπρίγγια καὶ ἄμβρο γὰρ ἄξια τῆσ γήμ
 ται φθάρσας καὶ αἰθροιοματὸσ ζώου ἡρίζα δμ
 τὸ θάσασα :-*

ἄγαρικον:



اغاريقين

οἶ

ἄγαρικον

Ἄγαρικομρίζα φαίμα σιληφίσο δμ φερῆσ. οὐσπυλη
 τῆσ ἐπίφαμιαμ ὄσαστὸ σιληφίσομ. ἀραῖα δὲ ὄμ. ἀπ.
 δὲ αὐτοῦ τὸ μὲν ἄρδμ. τὸ δὲ θήλυ. ὁμ δὲ διαφθόσασα

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to distinguish between the influence of the rain and of the thunderbolts: it is not the rain but the thunder that makes the mushrooms grow. Pliny sounds as though he were simply repeating a tiresome adage, after the manner of those



Fig. 7

15TH CENTURY
WOODCUT OF
THE AGARICUM
from *Hortus Sa-*
nitatis, Mainz,
1491.

who say it is not the heat but the humidity that causes distress in summer. Juvenal in *Satire* v: 116 speaks of the longed-for thunder in springtime that replenishes the table with mushrooms:

Post hunc tradentur tubera, si ver tune erit et facient optata tonitrua cenas maiores.
Athenasus, writing in the 3rd century after Christ, quotes Theophrastus five centuries earlier on certain unidentified underground fungi called οἰτόν in Thrace:

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Concerning these a singular fact is related, viz., that they grow when autumn rains come with severe thunderstorms; the more thundering there is, the more they grow, the presumption being that this is the more important cause. [BOOK n: 62]

One could not demand better documentation for this ancient notion which the most intelligent men of the day accepted without question. What explanation is there for it; Plutarch had none. Modern mycologists have none. Does thunder perhaps shake the soil and precipitate a crop of fungi that would otherwise emerge over weeks? There is no evidence to support this. We believe that the classical writers were repeating words whose portentous religious meaning was already in their time forgotten.

The ancient belief must have survived the classic world, but we have found only one sure evidence of it in modern Europe. In Littré under *tniffe* we read the statement that when it thunders, people in some parts of the French countryside say, "Voilà un bon temps pour les truffes" — "There's fine weather for truffles."¹ Professor Georg Morgenstierne of Oslo, however, has turned up for us amazing data proving that the link between fire and fungi lingers on to this day in certain parts of Asia. (To Professor Morgenstierne we are deeply indebted for all our information concerning the Iranian and Indie languages.) In Kashmir the gilled mushrooms known as *hedur* and *henda* are said to be engendered by thunder. They are eaten by both Hindus and Muslims, cooked with ghee; they are preserved by drying and used in broths and stews. The mountains of Kashmir produce great quantities of another mushroom, *kana-g"ch*, which means 'ear-morel', and it too emerges from the earth in response to thunder.

More remarkable still is the testimony from that valley southeast of Samarkand where Yaghnobi is spoken, a dialect descended from the ancient Sogdian language, related to Persian and of course belonging to the Indo-European family. The folk who speak this tongue believe that when the highest god shakes his winter coat, the air is rent with thunder, and then the children must say:

I. From the ifth through the i8th century various English writers attributed 'fairy-rings' to lightning; thus Robert Plot's *The Natural History of Stafford-shire*, 1686, Chap, i; Erasmus Darwin's *The Botanic Garden*, London, 1791, i: 36:

So from dark clouds the playful lightning springs,
Rives the firm oak, or prints the Fairy-rings.

The evidence indicates that this belief had no roots in folklore but sprang from the New Learning, a 'scientific' explanation to replace outworn notions about the dancing of midnight fairies. Moreover, whereas today 'fairy-ring' immediately suggests mushrooms, the early writers such as Robert Plot discuss fairy-rings at length without mentioning fungi. It was the grass of darker green that made the ring, not mushrooms, and the link between the two is first mentioned, so far as our knowledge goes, in a book published in London in 1717-18, Richard Bradley's *New Improvements of Planting and Gardening*. Therefore, despite superficial appearances, we think we must rule out the English fairy-ring association with lightning in our discussion of the ancient belief in a thunder-mushroom.

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Katta xarcak man, pullja xarcak tau.

The big mushroom is for me, the small one for you.

Not far away, in the upper Zarafshan valley where we find a Persian dialect known as Tadzhik, the children cry, "Puri, puri, xorc", xorc meaning 'mushroom' and *puri* being a thick-stalked annual that springs up early in the season and quickly dies away, both stalk and root being eaten raw by the natives. Someone should tell us which mushroom these children near the Pamirs have in mind. In Yaghnobi, and also in Tadzhik as spoken in the vicinity of the town of Match, there survives an old belief that when the divinity known as *Mama*, 'Grandmother', shakes her baggy trousers, she lets fly a swarm of lice to the earth, and from those lice, after thunder storms, an abundance of mushrooms spring up.¹

Today in Persia the common word for 'mushroom' is *qarc*, but there is one kind, perhaps a *terfezia*, that is called *dumbalan* (plural of *dumbal*, 'boil', 'pustule', 'bubo'), and people say they grow in the desert 'after thunderstorms'.

Again thanks to Professor Morgenstierne, we are able to pin-point the earliest reference in surviving Sanskrit literature to this belief in the 'thunder-mushroom'. It is in Kalidasa's lyrical poem *Meghaduta*, 'The Cloud Messenger', written about A.D. 400. In verse n the exiled *yaksha* or demigod addresses the rain-cloud drifting northward over India:

. . . and when they hear thy sweet-sounding, fertilizing
thunder, which is able to cover the earth with mushrooms. . .

The word used for 'mushroom' here is *s'ilmdhra*, of unknown derivation, probably taken over by Sanskrit from some earlier unrelated tongue of India. '*Sili*' might mean a frog or toad, and then *-dhra* would mean 'carrying': 'toad-carrier' or something akin to our 'toadstool'. But this tempting explanation of the ancient word is far from established.

Is it not deeply stirring to contemplate these surviving traces of a folk association uniting thunderbolts with fungi - a belief accepted by ancient Greece and Rome, queried by Plutarch, and holding on in Kashmir and the Pamirs? Angelo de Gubernatis in the second volume of his *Mythologie des Plantes* (Paris, 1882), when he discusses mushrooms, observes that the solar hero was said sometimes in antiquity to hide behind a mushroom, and he supposes that by 'mushroom' a cloud was meant. The direct and simple meaning seems preferable. The solar hero, a projection of divine fire, lies dormant for the nonce in

i. See Heinrich F. J. Junker, *Arische Forschungen*, 'Yaghnobi-Studien', I, p. 106 (*Abhandlungen d. philol.-hist. Klasse d. sachsichen Akademie d. Wissenschaften*, Band XLI, No. n, Leipzig, 1930). His source was M. S. Andreev, 'Po etnografli tadjikov', in *Tadjikistan, sbornik statej*, edited by N. L. Korzhencvskij, Tashkent, 1925, pp. 172-3.

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fungal tinder, ready to leap forth on divine command, just as the dormant φαλλός; rises in ἰθύ-φαλλος. Here then is a partial answer to Plutarch's question: the fungi, saturated in sexual associations, are intimately associated as tinder with the making of fire, and fire expresses metaphorically the procreative act. On every plane the fungal world is redolent with the spirit of generation. Even the phosphorescence that some fungi emit must have deepened the mystery, augmented the awe. The very fungi were called into being by the gods, by those bolts of celestial fire hurled to earth with the crackling and deafening roar of thunder.

Let us pursue this theme further, to the very core of ancient Rome's religious beliefs. Rome's eponymous heroes sprang from the union of divine fire with vestal virgins, and fungi seem to have been officially present at the consummation. Sir James Frazer in *The Golden Bough* summarized the legends and pointed out their meaning.¹ It seems that when Ocrisia, handmaiden to Tanaquil the wife of King Tarquin the Elder, was offering cakes and libations of wine on the royal hearth, a flame assumed the shape of the male member and shot forth from the fire, impregnating her with a child who was destined to reign as Servius Tullius. The child's divine paternity was well attested later when an aureole of lambent flame was seen to play around his head. Concerning Romulus and Remus Plutarch records a similar legend, which he took from Promathion's *History of Rome*: in the house of the king of Alba there hovered over the hearth for days a phantasma in the shape of the male organ of generation, which in the end, by one of the handmaidens, gave being to the twins.²

Nowhere in surviving versions of these legends are fungi mentioned. What then was our surprise when we discovered that Professor Arthur Stanley Pease of Harvard University, in a note in *Classical Philology* in 1947, urged that a natural phenomenon be sought to explain these miracles and volunteered the surmise that the key would be found in the mushroom that he called the ithyphallus impudicus, that astonishing fungus which from its sac or cod shoots forth to its proud height in the course of minutes. This, says Professor Pease, is what underlay Ovid's line in the *Fasti*, vi: 631:

... hie inter cineris obsceni forma virilis.

1. See *The Golden Bough*, vol. n of *The Magic Art and the Evolution of Kings*, pp. 195 ff, where he also gives the sources; a fuller discussion appears in Frazer's translation and discussion of Ovid's *Fasti*, published by Macmillan in 1929, vol. IV, pp. 300-304. For Arthur Stanley Pease's note, see *Classical Philology*, vol. 42 (Oct. 1947), P- 253-

2. Plutarch for the phallic apparition used μόρτον άνθρωός. (Plutarch's *Moralia*, Loeb edition, vol. rv, p. 360) If μόρτον by etymology or punning was linked with μορύσσω (*vide* E. Boisacq's *Diet. Etym. de la Langue Grecque*), the association with the phallic morel would be clinched. See discussion of morel', pp. 153-4.

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Professor Pease's happy suggestion may be refined. The morel, though far removed in mycological classification from the phallus impudicus, embodies in its shape the same erotic symbol, and unlike the phalloidaceae shows a remarkable predilection for sites of wood fires. J. G. Gleditsch in his *Methodus Fungorum*, published in Berlin in 1753, told¹ how just recently the old peasant women of Brandenburg, observing this predilection, had taken to making bonfires in the woods to induce the growth of morels, causing thereby so many forest fires that the authorities had banned the practice. Dr. Ramsbottom in his *Mushrooms & Toadstools* reports that during and after the first World War the sites of burned houses in northern France and of abandoned trenches became veritable gardens of morels, and he also relates a personal experience confirming this biological nexus between morels and fired places. Indeed this affinity is a commonplace of fungal lore.

We place then a morel rather than the stinkhorn in those ancient hearths of Rome's eponymous founders. And this leads us to venture a daring conjecture concerning the origin of the Greek word for 'mushroom', μύκης. In modern times we are in a position to observe how the words of the sponge cluster - the basic words for the fungi in common Indo-European - yield place sometimes to other words that express a fashionable facet of man's evolving attitude toward the fungal world. From a name for a single edible species, *mousseron* in 'mushroom' becomes a designation for any edible species and even for all species. The French *champignon*, once applied only to the common field mushroom, acquired overshadowing importance when the art of its cultivation was mastered, and now this word embraces in French all fungi, even the microscopic kinds. In German *Pilz* is a newcomer, but already competes with *Schwamm*, and in Russian *guba* has largely surrendered the field to the toothsome *grib*. Thanks to the importance of a particular mushroom species, its specific name can become generic. In Greek σπόγγος lost its fungal meaning early - the surviving records never report it - and its terrain was wholly occupied by μύκης. What potent forces could have caused this early substitution? Our surmise is that μύκης originally was the name of the morel, and that its awesome religious and magical meaning, its link with the generation of fire and divine procreation, so far eclipsed all other fungal associations that it took over the whole semantic area of the fungi. The Greeks never won honors in mycophagy and there was no competition from fungi as food. Let us see whether, as we progress in our argument, we come upon supporting evidence for this possibility. The sacred role of the μύκης as we envisage it, could have been a legacy of the Etruscans or some other

1. p. 60; the references in Dr. Ramsbottom's book are on pp. 76-77.

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Mediterranean culture. In neither ancient nor middle Greek is there any word that scholars translate by 'morel', so that the way is open for our suggestion. The specific name in Latin was *spongia* or *spongiolus* in imperial times, a survival in Latin of the lost fungal meaning of σπόγγος.

Just as in French one distinguishes the specific and the generic uses of *champignon*, so in ancient Greek the reader must decide whether in a given context μύκης meant the morel or the whole fungal tribe. As an example let us take a text from the *Geoponica*, an agricultural treatise assembled in its present form before the end of the first millennium A.D. In Book xn Chapter 41 we find a passage that reads thus:

If you would have μύκητας to grow from the ground, you must select a spot of light soil on a hill where reeds grow ; there you must collect together twigs and other burnable things, and set all on fire just before rain is expected. If rain come not, you must sprinkle the place with pure water, but the (μύκητας thus produced are poor ones.

How reminiscent this is of Gleditsch and Ramsbottom! The Greeks also knew what the German and the Englishman tell us, and in this Greek text μύκης, in our opinion, must carry the specific meaning of 'morel'.

Up to this point we have linked fungi only with the gods of thunder and lightning in the Indo-European world. But the association is far more extensive. On a later page we shall see that the Bedouin of the desert, when electric storms are severe in our month of October, know for sure that the crop of esteemed *terfezia* will be heavy *four months later*, and at the appointed time they make their way to those places where experience has taught them to seek this delectable fare.

A Philippine mycologist, Jose Miguel Mendoza, reports¹ that the natives throughout the islands commonly believe that thunder and lightning cause the generation of mushrooms, and in the spring of the year when they hear the thunder roll, they rush into the meadows to gather the edible kinds. In the Pampango tongue, spoken in central Luzon, the *collybia albuminosa* is called the *payungpayungan kulog*, the first word meaning 'parasol-like', and the second being 'thunder' in both Tagalog and Pampango. The culture of the Philippines is an accretion of many layers, and this belief in the thunder-mushroom could be Malayan or Indian or Chinese.

Yes, Chinese. By good fortune we are able to document the Chinese association of certain mushrooms with thunder. There came into our possession in 1951 a rare, 8-volume work on ethno-mycology entitled *The History of Mushrooms*,

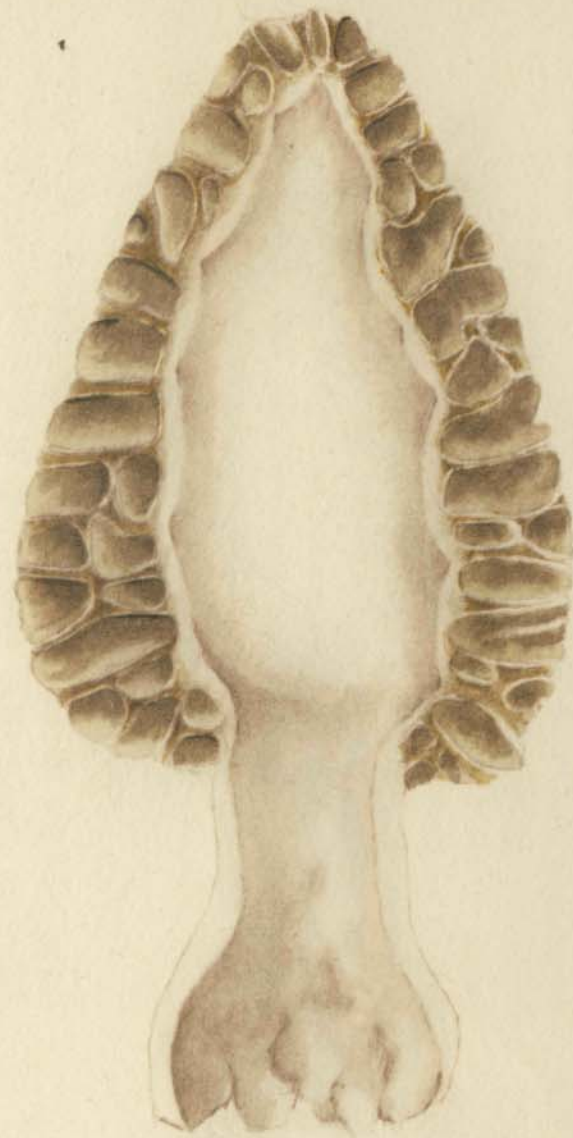
1. See his 'Philippine Mushrooms', published in *The Philippine Journal of Science*, vol. 65, Jan.-April 1938, which the author has supplemented for us in private correspondence.

PLATE XXIII

Jean-Henri Fabre. *Morchella vulgaris* Pers.

English: *morel*; French: *morille*;

Russian: *smorchok*.



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dated 1811 and written by Ishiwara Gusha ('the Fool from the town of Ishiwara'), a pen-name for the Japanese classical scholar Katashi Masujima, professor in Yedo at the school for samurai called Shoheiko. (Another of his pen-names was Ran-en, 'Orchid Garden'.) In this curious, hand-written work the author gathered together everything that had been said about mushrooms by Chinese and Japanese authors, and it is our hope to present it some day to our readers in an annotated translation. With the help of our friends Mr. and Mrs. Wango Weng, we have discovered in the sixth volume extensive discussions of three kinds of thunder-mushrooms. All three make excellent eating. First there is the *lei-ching t'an*, 'thunder-aroused mushroom':

雷驚蕈

which springs forth when the worms are stirring and the east wind brings the thaw and the earth loosens and the air grows warm. (This suggests the morel, but later the author speaks of the 'parasol' of the mushroom.) The second is the *lei-sheng chun*, 'thunder-peal mushroom':

雷声菌

which grows in the grass after thunder and rain in summer and autumn, 'leaping forth when the thunder calls'. Finally we have the *lei chun*, the simple 'thunder-mushroom' :

雷菌

Though our Japanese author quotes Chinese sources that refer only to the regions of Sochow and Kwangsi Province, this does not mean that the association of thunder with mushrooms is confined to those parts of China. Indeed, we can document the survival of this theme on the very periphery of the Chinese cultural world. In a letter written to us by Charles Evans, the Himalayan explorer and climber, he tells us that the Sherpas, who culturally are Tibetans, believe that thunderstorms make mushrooms grow. On the other hand Masujima, himself a Japanese, is silent on the thunder theme in his treatment of Japanese mushrooms: apparently the Japanese know it not.

But this is not all. In the language of the Maori of New Zealand, the word for mushroom is *whatitiri*. The word for thunder is the same: *whatitiri* or *whaitiri*. As a proper noun *Whaitiri* is the name of the mythical ancestress of the Maori

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people and all the other branches of the Polynesian race. People think of her as the thunderer, and her grandchild, Tawhaki, shoots forth bolts of lightning from beneath his armpits. Eponym, fire, fungi - how astonishing that we should find the same pattern in Oceania as in the Mediterranean! Some years ago Professor Heim drew attention to a curious belief in Madagascar, where Polynesian influences have been strong.¹ He is describing the mushroom *lentinus tuber regium* Fr., called *olatafa* by the natives of the Tanala country. According to the local chief, the practice is to dry this fungus, and shred and rub it to a powder with the aid of a hard stone, and then to the powder the natives add a little water. When a thunder storm breaks and reaches alarming violence, it is the custom to take some of the paste into the mouth, and when the lightning flashes, spit it forth into the sky, crying out "Fotaka!", or else, "Fotaka malemy!", which means, "Earth!" or "Soft earth!", thereby giving utterance to a prayer that the thunder will be mild as mud. Professor Heim confirmed this practice with other informants in the region of Fort-Carnot. It seems that *tafa* in the native language designates a person momentarily off balance, and this word may underlie the name of the mushroom and the incantation. Whatever the layers of meaning that underlie the Tanala practice, for us its importance is the tie that binds certain mushrooms with bolts of celestial fire. The explanation given to Professor Heim is not convincing: it sounds like a rationalization by people who have forgotten. That mushroomic spittle tossed into the teeth of the storm, into the flash of lightning - may it not incorporate the seminal idea, the procreative aspiration, a prayer to the divine begetter > This is not a rhetorical question. It is a suggestion for anthropologists working in Madagascar.

Here we bring to an end, but only for the present, our discussion of the cultural tie that links mushrooms with lightning. On page 316 we shall return to this mystery, and with the aid of further evidence of our pandemic theme in archaic cultures, we shall submit a surmise to explain it.

I. 'L'Olatafa', by Roger Heim, published in the *Archives du Museum National d'Histoire Naturelle*, in the Volume du Tricentenaire, 6th series, Tome xn, 1935, pp. 549-554.

8 THE GOURD

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The French word *potiron* means 'pumpkin'. In the West of France and as far south as the Garonne it also means any large mushroom. The word presents what is perhaps the prettiest problem in the whole fungal vocabulary of Europe. No one has hitherto determined its origin. Littré originally quoted Gilles Menage's suggestion of a word found in the writings of the Arabic thinker Avicenna - *alphotie*. Later in his *Supplement* he added Marcel Devic's alternative Arabic source, the word *futr* meaning 'mushroom'. Oscar Bloch in his turn favored the *Syrinc pdturtd*, which he said meant 'morel'. These bizarre suggestions with their curious bias for the Near East offer no explanation for *potiron* in the sense of 'pumpkin'. They only illustrate how even philologists, when at a loss, give recognition to the flimsiest guesses. The Arabic and the Syriac words are etymologically identical, based on a Semitic root meaning 'to split' or 'to cleave'.

In Latin *cucutna* means a kettle, *cucumis* a cucumber, and *cucurbita* a gourd. Among primitive communities living in the climatic zone where gourds flourish, these have always served for cooking fluid food and boiling water. This primitive practice must still have been alive in the minds of the ancient Romans when they used words for kettles and gourds that closely resembled each other, and we think that *potiron* is a translation (*pot* meaning 'kettle') of the Latin words, preserving for us the semantic link that was obvious in Latin. But this does not explain the use of *potiron* for 'mushroom'.

The pumpkin-mushroom link is not confined to *potiron*. We discover it in Provençal, where *coucourlo* means both the common field mushroom and the pumpkin. The Italian *cocomero* means 'pumpkin' but not mushroom; the Provençal *cougoumello* is the name of certain mushrooms, but does not mean pumpkin. The general word for all mushrooms in Portuguese is *cogumelo*; it is not, however, linked with any gourd. We seem to be in the presence here of a variety of words derived from one or the other of the Latin *cucuma*, *cucumis*, and *cucurbita*. But why are mushrooms found in this company?

All words such as these, which live out their lives for the most part in oral usage, lend themselves to popular contamination with other words. Some mushrooms when they first break the soil look like eggs, and this is why the *amanita caesarea* is called in standard Italian the *ovolo* and the *amanita muscaria* the *ovolaccio*. The French word *coque* means 'eggshell' and there are colloquial words in Italian, *cocco* and *cucco*, meaning 'egg'. In standard Italian *cocco* is sometimes used as another name for the *amanita caesarea*, and this word takes various

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local forms in the North: in Piedmont *cocon* or *coc* or *cucon*; in Lombardy, *jung cocch*; in Venice, the *boleo coco* or *coco bon*; in Genoa, the *cucun*. (Our English 'cocoon' belongs to the same family.) The names of the *amanita muscaria* in northern Italy bear the same stamp: *cocch fals* or *cocch velenos*, or *cocch bastard* in Milan. The *lepiota procera* is the *cocomelle* or *cuccamele* in Piedmont; in France this species is called in some regions the *coulemelle* and in others the *potiron*. It would appear that all of these names stem ultimately from the Latin word for kettle, but have been influenced in their shape by words for eggs or egg-shells.

But all this still leaves unexplained why, in the first place, pumpkins and mushrooms got mixed up together.

Another word for 'pumpkin' in French is *pepon*, for which Frederic Godefroy gives the following early variants: *popon*, *poupon*, *pompon*, *ponpon*. 'Pumpkin' in English is a popular form of the Middle English 'pumpion', which in turn comes from the French word that we are now discussing. For the sake of our argument and in advance of our supporting evidence, let us assume that the French word *pepon* originally carried two meanings, 'pumpkin' and 'mushroom'. It has retained only one in French, and bequeathed only that one to English. But in Basque *papun* and *panpun* mean 'mushroom', and could represent the lost meaning of *pepon*. The French philologists have been baffled by the word *pompon*, which is the English 'pompom', since its semantic tie with gourds is not clear. But the difficulty is solved if the old French word also meant 'mushroom', for what is a *pompon* but a 'mushroom'?¹

This hypothesis, supported so far by only two strands of circumstantial evidence, still does not tell us why gourds were linked with mushrooms.

This link is deep-seated, but we believe we can put our finger on it.

At the outset let us examine the word *potiron* more closely, and especially its use in the 16th century.

In the sense of 'mushroom' *potiron* was in use at least as far back as the 15th century, according to Albert Dauzat. This is the older meaning, antedating the discovery of America. *Potiron* as a designation for gourds is confined to squashes and pumpkins, and they are of New World provenience. In the 16th century these vegetables were called *courges d'Inde* and *courges d'outre-mer*, but *potiron* began

I. In the United States and Canada, the ordinary woodsman's word for any shelf fungus is 'conk', and because of the shape of the growth, the word is supposed to come from 'conch'. But woodsmen do not know the molluscs and are unlikely to turn to them for metaphors. The *Dictionary of American English* gives grounds for supposing that 'conk' is a shortened form of 'conkus' or 'konkus'. In the English counties from Lincolnshire to the Scottish border there has long been a word used for cucumbers: 'congers', 'cungers', and 'conkers'. Is the American word for the fungus cognate with the name for the cucumber, and do we find here another example of the association of fungi with gourds? In the absence of a better etymology, we offer this as a conjecture, to be tested by further inquiry.



PLATE xxiv. Jan Fyt. Still life. *Brussels, Musees Royaux des Beaux-Arts de Belgique.*



PLATE xxv. Jan Davidsz. de Heem. Still life. *London, Wallace Collection.*



PLATE xxvi. Adriaen van Utrecht. Still life. *Brussels, Musees Royaux des Beaux-Arts de Belgique.*



PLATE xxvu. Frontispiece to Franciscus van Sterbeeck's *Theatrum Fungorum*, Antwerp, 1675.

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to supersede those nonce names in the iyth century. If there was a metaphorical transfer, we must conclude that the New World squash suggested a mushroom to the French and was therefore called a mushroom. This explanation seems to have satisfied the philologists Albert Dauzat and Oscar Bloch, but it leaves us sceptical. To be fair we must point out that there is one small squash with scalloped edges that in color and even in external texture might suggest certain mushrooms. This is the kind of squash, a variety of cucurbita pepo, known formerly as the simlin or cymling and today as the patty pan squash or white bush scallop. A further circumstance might support the philologists' position. The French were discovering how to cultivate the *champignon de couche* at the very moment when they were learning to cultivate the squash, in the first half of the iyth century, and there is reason to believe that the manured hills of the squash-patch served simultaneously as mushroom beds. For centuries the country folk of some parts of western Europe had been encouraging the growth of various kinds of edible fungi by bringing about the conditions under which they might spontaneously appear. In the iyth century it was known in France that parings of the psalliota campestris rejected in the kitchen could be thrown on horse manure with a reasonable expectation that they would produce a crop of mushrooms in the warm fermenting dung.¹ As we have mentioned before on page 6, N. de Bonnefons described this practice for the first time in print in his *Le Jardinier fran^{ois}* in 1651, and he added the significant advice that the beds prepared for melons could serve this double purpose. In our mind's eye we can see the mushrooms growing in the same beds or hills with melons, pumpkins, and other gourds, and this was taking place at the very moment when *potiron*, an old word for 'mushroom', was beginning to be used as the name for certain exotic gourds, lately introduced from overseas. It was therefore not unnatural for farmers to associate mushrooms with gourds. Furthermore, the readiness of both squashes and mushrooms to putrefy rather soon into a watery mess² might have suggested a kinship that expressed itself in the

1. The use of fungal 'spawn' came later, as did the discovery that mushrooms lent themselves to cultivation in caves and cellars. But there is a baffling sentence in the *Satyricon* of Petronius Arbiter, written in the first century: *Ecce intra hos dies scripsit, ut illi ex India semen boletorum mitteretur.* [Loeb Library, p. 59] Within a few days, I may say, he has written for a cargo of mushroom seed from India. If *boletus* here carries its usual meaning of the Caesar's amanita, it indicates a mastery in the cultivation of these delectable mushrooms wholly unknown today and never elsewhere mentioned in surviving records of ancient times.

2. Shakespere uses 'squash' on several occasions. Thus in Act. m, Sc. i of *A Midsummer Night's Dream* Bottom is asking the names of various characters and from one learns that he is Pease Blossom, whereupon Bottom retorts:

I pray you commend me to Mistress Squash your mother
and to Master Peascod your father.

'Squash' as a name for the American gourd is derived from a Narragansett Indian word, and Shakespere could not have known the word and probably did not know the gourd. 'Squash' in the sense of 'squeeze' is European

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use of the same name for both, a similarity in putrefaction that Sir Thomas Elyot pointed out in 1541 in the words that we quoted on page 19. All in all, the evidence assembled in this paragraph would seem to offer an explanation for the dual use of *potiron*.

But let us not forget the suggestion inherent in the older forms of the word *pepon* indicating that the association of gourds and mushrooms long antedated the 16th century and the cultivation of the field mushroom.

J_ here is a source of promising evidence relevant to our theme of surprising and fascinating quality in the still-life paintings of the Low Countries in the 17th century. This was the epoch when the Flemish and Dutch schools were producing innumerable canvases representing the foods of the times - fish, game, meats, vegetables, fruits. The number of accomplished artists who devoted their talents to paintings of food is astonishing, and apparently they never tired of their theme. We have combed these still-lives for mushrooms, and while of necessity we cover only a small part of the source materials, it is clear that paintings of food with mushrooms are exceedingly rare. We have found only four, of which not one is Dutch. All four are Flemish, or from the Catholic side of the religious line that bisected then as now the Low Countries. On a later page we shall revert to the significant absence of fungi as food from paintings of the Dutch school.

Of the four paintings we reproduce one by Jan Fyt, and details from a canvas by Jan Davidsz. de Heem and from one by Adriaen van Utrecht. All three of these painters were in the plenitude of their powers at the precise time when N. de Bonnefons was composing his book on gardening and describing for the first time the preparation of mushroom beds. A fourth painting, attributed to the Antwerp artist Frans Snyders, shows a young market woman surrounded by baskets of diverse vegetables and fruits with one basket of ceps; it hangs in the art gallery at Schloss Pommersfelden, Germany. Snyders was a slightly older contemporary of the other three. Of this painting a 17th century variant is in the Louvre. All four artists worked in Antwerp or Brussels.

The startling feature of the three paintings that we reproduce is that in all three we find *a. potiron* or squash, and in two the *potiron* is juxtaposed to mushrooms. In the light of the dual meaning of *potiron*, this juxtaposition justifies a conjecture that it was not accidental. Thanks to the gracious help of Dr. Hugh

in origin, and specifically it meant for Shakespeare an unripe pea pod or 'peascod'. The pea pod played a familiar role in amatory folklore in Shakespeare's day, and 'peascod' was heavily charged with genito-urinary puns and symbols; cf. 'cod', 'codpiece', etc. Mistress 'Squash' invokes a parallel female metaphor equivalent to Shakespeare's erotic use of 'medlar' in *Romeo and Juliet* and elsewhere. Though 'cod', as we have seen, sometimes meant 'puffbair', in Bottom's words there is no link with the fungal world or gourds.

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C. Cutler, Assistant Director of the Missouri Botanical Garden, St. Louis, we can identify the squashes, and he points out that they are the only vegetables of New World provenience in these paintings. In the Van Utrecht the squash is the *cucurbita moschata*, and belongs to the variety now called Dickinson Field pumpkin, familiar in the American Southwest and in central and southern Mexico. The squash in the Fyt is probably a *cucurbita moschata* but might be a pumpkin, i.e., *cucurbita pepo*. In Heem's painting we clearly find the pumpkin. Both squashes and pumpkins may be called *potirons* in modern French. As for the mushrooms, Snyder, Fyt, and Heem give us ceps; Van Utrecht offers us ceps and three apparently gilled mushrooms. If as we believe these latter are very ripe *champignons* or *roses*, they are the earliest known representation of the common mushroom by an accomplished artist.

The mute testimony of these paintings is of extraordinary interest. It might seem probable that in the painters' minds the squash and mushrooms had an affinity for each other, and the squashes in question were certainly of American origin. At the same time the mushrooms painted by them as food were chiefly boleti, and boleti never grew in a pumpkin patch. Clearly the *champignon de couche* played little or no role in the market places of Flanders and Brabant, and the affinity of mushrooms with the squash was unrelated to the mushroom beds described by Bonnefons. The cucurbitaceae painted by the Flemish artists did not include the patty pan squash, with its superficial resemblance to a mushroom. *Potiron* in the sense of 'mushroom' has never been known in the Walloon dialect of French.

The key to the four Flemish paintings is to be found in Franciscus van Sterbeeck's *Theatrum Fungorum*, published in Antwerp in 1675, the earliest book dealing solely with mushrooms. The author never refers to the still-life painters, who were his older contemporaries, but he divulges a precious item of ethnomycological lore. He informs us that the Flemings were mycophobes until the beginning of the 17th century, at which time certain Italian merchants came to take up residence in Flanders, and by their example they showed that mushrooms could be eaten. They launched a vogue for this novel victual, gathering mushrooms themselves, importing dried ones from Italy and Burgundy, and teaching all and sundry how to distinguish the many good kinds from the bad. In fact, Van Sterbeeck's treatise is itself a tribute to this budding mycophilia, written by an enthusiast to spread the good tidings, the first of hundreds of such missionary efforts brought out in the mycophobic North in the past three centuries. As there was no Flemish word to designate mushrooms suitable for the dining room, the Flemings had lately borrowed *kampernoeljes*

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from, the French dialect spoken in nearby Picardy,¹ and applied it to all the edible kinds, especially ceps. Afterwards it gave way to *champignons*. We reproduce the frontispiece of Van Sterbeeck's work, with its quaint commentary on early mycophagy among the Flemings. The author portrays himself in a bust at the top of the architectural design, helpfully telling us that his age was 44. On one side of him are effigies of happy infants nourished doubtless on the wholesome fungi; on the other side the corresponding amori are in acute distress from the other kind. Below we see two gentlemen responding to aggressive selling tactics of the mushroom vendors. We suspect that the vendors on the right are ready to sell the evil wares descending from the wretched infants above.

For Van Sterbeeck, for Jan Fyt and his colleagues, mushrooms were a novelty like the squashes from the New World. This must have been one reason for juxtaposing them. Just as the Italians brought mycophagy to Flanders, so they may have been addicted to the new-fangled gourds. Indeed, Italian artists may have suggested to the Flemings the very theme for the paintings that we are discussing. Already in the 16th century the Italian painter Giuseppe Arcimboldo was giving eloquent expression to the same idea.

Arcimboldo was born in 1527 and died in 1593. He delighted in allegorical figures representing the Seasons, the Four Elements, and the cardinal points of the compass, which he would contrive to represent by an ingenious arrangement of fruits, vegetables, meats, animals, fishes, or utensils, his selection harmonizing with his allegory. We reproduce one of his paintings, a reclining figure that embodies the spirit of Autumn. Until a few years ago it belonged to a parish church near Brescia, and it now hangs in the Pinacoteca of that city, not far from Milan. However deficient Arcimboldo was in intellectual and emotional depth, he was an accomplished craftsman, and this painting constitutes a document of singular value for the ethno-botanist. Most of the vegetables and fruits are of Mediterranean provenience, including the medlars of which no fewer than four are present. The egg plant had been lately introduced into Italy from the East. The tuberoses in the figure's hair, the squashes, and the maize come from America, the first two from Mexico. The maize is of a Mexican variety also, though it could come from further south.

Our painting is undated, but perhaps we can fix with reasonable certainty the period of its execution. From 1562 to 1587 Arcimboldo lived in Central Europe, except for a visit to Milan in 1566. Both by its traditional location and by the artist's choice of vegetables and fruits, it is clear that the painting was done in

I. The use in the Low Countries of *kampernoeljes* dates back at least to 1567, for we find it cited in Hadrianus Junius' *Nomendator* published in that year.

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PLATE xxvii. Giuseppe Arcimboldo. Autumn. *Brescia, Pinacoteca.*



PLATE XXIX. Giuseppe Arcimboldo. Autumn: Detail. *Brescia, Pinacoteca.*

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Italy. From what we know about the arrival in Italy of the exotic plants that we find in the painting, it is far more likely that the artist worked on it after 1587 than before 1562. This means that it was a product of his last years, between 1587 and his death in 1593. These were the very years when potatoes were becoming known in northern Italy, and their absence from our painting favors an early date within these permissible limits. For the past half century ethno-botanists and cultural historians have been studying the impact on the Old World of the plants discovered in the New, especially tobacco, potatoes, and maize. To document the first phases of these profound innovations they have combed the writings of the explorers and historians, and searched through the 16th century herbals. The herbalist Leonhard Fuchs in his *De Historia Stirpium*, published in 1542, was the first to offer his readers a picture of maize, a woodcut. Thereafter such woodcuts appeared in almost all herbals, often copied not from life but from a preceding herbal, and often deficient botanically. For workers in this field the 16th century still-life painters offer an additional source of evidence that seems to have been ignored. We do not know whether our *Autumn* by Arcimboldo is the earliest still-life with maize, but we submit that his painting of it is incomparably superior to any pictures of maize that have hitherto been pointed out from the 16th and even 17th centuries. The artist's eye was truer than the herbalist's, his technique superior to the woodcutter's.¹

Our own interest in the Arcimboldo lies in his mushrooms. Mycophiles will be delighted with the clavaria that serves the recumbent Autumn for beard and mustachios. In the middle of the left thigh is an *ovolo* or Caesar's amanita. These are the earliest mushrooms known to us that we can say are well painted, and their like was not to be seen again for a full half century. We now draw our reader's attention to the proximity of the squash to the *ovolo*, and that squash happens to be the very one that, on an earlier page, we likened in texture and shape to mushrooms. It is the squash of American provenience variously called the cymling, the patty pan, and the white bush scallop. What urge prompted the artist to place mushroom and squash together? The scallop was an exotic, but in Italy the edible mushroom was not. Must we fall back on an accidental juxtaposition as our only resort; Or do we discover here an expression, possibly

I. For data about Arcimboldo's life we have relied on Benno Geiger's monograph, *Dipinti ghiribizzosi di Giuseppe Arcimboldo*, Florence, 1954. Plates 47, 52, 54, and 69 contain mushrooms. One of these hangs in the John and Mable Ringling Museum of Art, Sarasota, Florida, and another of them is the one we reproduce. A painting by Arcimboldo that closely parallels the one in Brescia is owned by Edward James, Esq., of Chichester, England, who has kindly furnished us with photographs of it. (Geiger mentions but does not reproduce this work.) In this variant the clavaria plays the same role. Instead of an *ovolo* in the thigh, we discover two *ovoli*, each constituting a cheek of the recumbent god. For the early history of maize in Europe we turned to John J. Finan's study, 'Maize in the Great Herbals', published in 1948 in the *Annals of the Missouri Botanical Garden*, pp. 149-191.

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only half conscious on the artist's part, of an ancient association of ideas, such as we adumbrated earlier and will shortly pursue further? But before we revert to that theme, we shall conclude our discussion of the mushroom-gourd link in iyth century paintings by briefly mentioning another aspect under which mushrooms and gourds were viewed together, the aspect that led Sir Thomas Elyot in 1541 to warn the readers of his *Castel of Helth* to beware of 'muserons, . . . gourds, and al other thinges, whiche wyll sone putrefie'.

A favorite theme of some iyth century still-life painters in the Low Countries was the transitory nature of all living things, the vanity of this world as contrasted with the eternal values of the next. In a private collection known to us there is a painting by Cornelis de Heem, son of Jan Davidsz. and identified with the Dutch school, in which this *vanitas vanitatis* chord finds graceful expression. A shaft of light penetrates from an aperture above to a sepulchral setting where a lovely flower arrangement is juxtaposed to a bisected gourd and some growing mushrooms. Unfortunately we have been denied permission to reproduce this extraordinary canvas. The mushrooms are in a shadow and scarcely lend themselves to identification. They are not pictured as food, but instead as the symbol of decay and death. From the glory of the flowers in their beauty the eye passes to the doomed segment of the disintegrating melon and on to the fungal expression of the grave. In this painting putrefaction and death are the meanings that underlie both gourd and mushroom.

If we are right, there emerged in the iyth century new reasons for associating mushrooms and gourds. But the association in men's minds was far older. Some indications of this older tradition seem to emerge in the ancient writers. Take for example the work known in English as *Etymologies* composed by St. Isidore of Seville around A.D. 600. He has occasion to list the vegetables with all their names. Is it by chance that immediately after the cucumbers (*cucumeres*) and gourds (*cucurbitce*) he adds *the fungi* and *tubera* or truffles;¹ Athenaeus in the second book of *The Deipnosophists* also discusses numerous vegetable foods, and what is our surprise to discover that here also the comments on the mushrooms and truffles follow hard upon the paragraphs dealing with the gourds! It is a commonplace of reference works that the order of the alphabet constantly juxtaposes disparate words and ideas, but the alphabet offers us no explanation for the sequence of vegetables that we find in St. Isidore and Athenaeus. Pliny is yet another witness to the tie that binds mushrooms to gourds. In

i. See J. P. Migne, *Patrologia Cursus Cotnpletus*, vol. 82, column 637.

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a sentence in his *Historia Naturalis* hitherto unremarked by commentators and ignored by the editors of Liddell & Scott's Greek lexicon, he tells us, in Book XX, in the chapter that discusses the gourd (*cucurbita*), about a wild gour/1, hollow, on which he says the Greeks have bestowed the name *spongus*, a gourd growing only on stony soil, of which the walls are of the thickness of a finger, which when chewed yields a juice wholesome for the stomach.¹ Here then in ancient times is a wild gourd that shares with sponges and mushrooms a name belonging to the cluster of basic words for the fungal tribe. The dual function of *potiron* in the 19th century was a revival and not an innovation, and we believe that in the root of the Latin word *pepo* we shall find mushrooms and gourds conjoined.

1 Throughout the Slavic lands there is a distinctive name for the common field mushroom. It takes various forms, but in the Ukraine it is *pecheritza*, and *pecharka* may be taken as a typical variant in other Slavic countries. The uniformity of this name throughout the Slavic world and its invariable application to the common field mushroom are remarkable evidences of its antiquity: it must antedate the dispersion of the Slavs and the differentiation in Slavic languages. The Lithuanians do not use the word, nor do the Germanic peoples; but the Jews of Eastern Europe have adopted it in Yiddish, and refer to a girl dressed up 'like a *pecheritza*', as an American might say, 'like a Christmas tree'. With a transposition of consonants, the word has been taken into both Rumanian, *ciuperca*, and Magyar, *csoporke*. Its derivation has never been clear. Some have suggested that it came *from pechora*, meaning a cave, since the *psalliota campestris* lends itself to cultivation in cellars and caves. But this is unacceptable, for the wild field mushroom does not grow in caves and its artificial cultivation began in France only after the year 1700. Others have suggested a derivation from *peek'*, meaning oven, and gone on to assume that *the pecheritza* was normally roasted. This is hardly satisfying, for the field mushroom lends itself to roasting no better than other kinds, and furthermore in the whole rich mushroom vocabulary of Europe there is no other name derived from a method of culinary preparation.

But let us take another look at that Slavic word *peek'*, 'oven'. It is cognate with the Greek *itszov*, the Latin *pepo*, whence through the French *pepon* to the English 'pumpion'. These are ah¹ of ancient and well attested lineage, com-

i. Many editions of Pliny give *somphos* instead of *spongus* as the name of this wild gourd. For our purpose the difference in words is unimportant, since they are cognate. According to the footnote of L. Desfontaines commenting on this textual question (Paris, 1829, vol. 6 of an edition with commentary by various hands, Bk. XX, Chap, vii [iii]), all Pliny mss. carry *spongus*.

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ing down to us from an Indo-European root that the French philologists Ernout and Meillet reconstruct as pek^wo, which became k^wek^wo in the Italian peninsula and in Celtic. The Latin *coquo*, meaning to cook, and all its kin and progeny are of this family. Whether *cucuma* and *cucumis* belong here, we do not know, but even if they do not, a semantic blend is possible, for cookery is the common denominator of them all. Baking and roasting and cooking are the ideas that underlie the root. That which is baked rises, expands, swells, grows brown and ripe and mature. It is therefore not surprising to discover that from the earliest times the word carried a second related meaning, the idea of 'ripening in the sun'. As Ernout and Meillet say, "La notion de 'maturite' est liee a la racine depuis l'indo-europeen." Whence the application to gourds, and - we submit - to that species of mushroom, the *psalliota campestris*, which comes to maturity in the open fields under the sun. Pumpkins and these mushrooms swell and ripen in the sun. The Provençal *concourlo*, meaning both field mushroom and pumpkin, is a breath-taking word, for in its specific application to the field mushroom we witness the toughness of a semantic theme running through long stretches of time and space.

If our argument prove sound, we have established from evidence gathered in Eastern Europe the explanation for the link between mushrooms and gourds that crops out in the French *potiron* and in the Provençal *coucourlo*. Just as we have earlier established what we call *apogge* cluster of mushroom words, and a sponge cluster, so now we discover the existence of a gourd cluster. All three appear to go back to Indo-European roots that resemble each other and that convey the same innermost idea of a growth or swelling. But only the first of these clusters directly involves the frogs and toads. In the French word *potiron*, wherein mushrooms are called pots, metaphorically speaking, the attentive mind catches a recurrence of the semantic theme that we found in the Indo-Aryan languages, where a Sanskrit word for 'pot' or 'jar' has fathered numerous progeny among the fungal words of various languages, the theme of the gourd, the swelling organism.

Here we might end this section, were it not that in the Basque language we discover an amazing thing. In the Labourdin dialect of Basque the name of the common field mushroom is *paratxiko*, the *-tx-* in Basque being pronounced like 'ch' in 'cheek'. By a transposition of consonants we arrive at the Slavic *pecharka*, with identical meaning! This is not all. In various parts of Europe there has always been a tendency for the name of the best known species of mushroom to be used as a word for mushrooms generally. If, as seems likely,

PLATE XXX

Jean-Henri Fabre. *Psalliota campestris* Fr. ex L.

English: *common field mushroom*; French: *rose*;

Russian: *pecheritza*.



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the general word used for mushrooms in Basque, *perretxiko*, is a variant of *paratxiko*, this would indicate that when the Basques acquired the word, the field mushroom was for them the dominant species. It is clear that these words cannot be native to the Basque language, for no native words begin with the letter p. In Catalonia *paratge* circulates as a mushroom name, but its specific application seems to be variable; we suggest that this Catalan word was borrowed from Basque. How then does it come about that the Basques use a word that seems to lend itself to identification with a Slavic term?

After pondering this curious question for some time, it occurred to us that the Gypsies could have borrowed the Slavic word and then, in the course of their wanderings, delivered it to the Basques. There are numerous lexicons of the various dialects of Romany, but none of them seem to have been composed by scholars interested in mushrooms. In the end we addressed a blind inquiry to that specialist in all matters pertaining to Gypsies, the Irish scholar Walter Starkie, whose experience with the Gypsies goes back over forty years. The reader will imagine our surprise and pleasure when we learned for the first time from Dr. Starkie's reply that the Gypsies are great lovers of all kinds of edible mushrooms, and that one mushroom name used by the Spanish Gypsies is *perrechitesl*

This is not of course a conclusive explanation of the Basque word. We should learn more about that Gypsy term - over how much of Europe the Gypsies use it, and what variations it manifests. The fact that the Gypsies are mycophiles is important. If the fruits of recent scholarship are sound, the Basques are linguistically related to the Caucasian peoples, and all the Caucasian peoples are mycophobes; this is true at least of the Georgians, Mingrelians, and Svanetians, and of the Circassians and Ossetians and Chechens, among whom we have had an opportunity to locate informants. The mushroom vocabulary of the Basques is reasonably rich, but consists mostly of borrowed or translated words, as though they too had once been mycophobes. The Basque country has long been a habitat for Gypsies. A people like the Basques not steeped in mycophagy is unlikely to bestow on the mycophilic Gypsies an important word for mushrooms, and perhaps least of all a word that is itself a loan word in Basque. On the other hand, mycophilic sojourners in the Pyrenees might have given to the Basques some lessons in mycophagy. Our hypothesis, after we formulated it, has received startling collateral support in an observation volunteered to us by a Swedish friend, the banker Frithiof Ahren. "I have been told", said he, "that the Gypsies taught us in Sweden to eat mushrooms, in times when food was scarce."

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-Cast of Moscow live a Finnish people on the Volga known as the Mordvines. In their language *panggo* is the word for mushrooms. North of them and a little to the east are another Finnish tribe, the Cheremissians, and 'mushroom' for them is *ponggo*. Beyond the Urals are the settlements of the Voguls, who say *pangkh*; and farther east, on the banks of the River Ob, dwell the last of the Finnish folk, the Ostjaks, with *pongkh*. Scholars are disposed to accept the likelihood that these Finno-Ugrian peoples have borrowed these words from the West.¹ Somewhat further to the east, in the valley of the Yenisei, the small tribe known as the Yenisei-Ostjaks are familiar with the *amanita muscaria* and call it the *hanggo*. They are unrelated ethnically or linguistically to the Finnish peoples, but they too have borrowed the same mushroomic word.

But the diffusion of the word does not stop on the banks of the Yenisei. Far to the east of them are the Yukaghirs, a tribe culturally and geographically midway between the Finns and the primitive Paleo-Siberian tribes on the Pacific coast. According to Waldemar Jochelson, they are mycophobes, considering all mushrooms unclean, springing up from dogs' urine. They have a word for fungus, *can-pai*, of which the first element means 'tree'. Is *-pai* related to our Finnish words;

If we may digress for a moment, the pejorative association of mushrooms with dogs' urine is not peculiar to the Yukaghirs; far from it. One of the fungal words in Hindi is *kUkar-muta*, 'dog's urine', and this corresponds with the Marathi term, *kutrya-cem mut*. The Jews of eastern Europe refrain from eating the mushrooms that they call in Yiddish *hintishe shvemlekh*, 'dog mushrooms', according to an informant from Chotin in Bessarabia; these are mushrooms that grow in damp places at the foot of trees, and that are believed to be contaminated by dogs. We suspect that the same idea lies behind the generic word for mushrooms of the mycophobic Ingush tribe in the Caucasus. Their word is *dzhahnuskul'*, 'dog's bride', in which *dzhali* means 'dog'. In the Germanic language of the Faeroe Islands, *hunda-land*, 'dog's urine', is a word for mushroom. For 'dog' the Poles say *pies*; the feminine form of this word, *psica*, is not used, but its plural, *psice*,

1. The diffusion of the word for 'fungus' among the eastern Finnish peoples and eastward in Siberia to the Chukchees was pointed out by Karl Bouda in his treatise, *Das Tschuktschische*, Leipzig, 1941, pp. 35-36. He does not mention the Yukaghirs. We owe our information about them to Waldemar Jochelson's *The Yukaghir and the Yukaghirized Tungus*, published by the American Museum of Natural History, N. Y., 1926, as vol. rx in the series of the Jesup North Pacific expedition, pp. 334, 340-1, 419. For information about the Yenisei-Ostjaks, see Kai Donner's ethnological notes published in the *Memoires* of the Societe Finno-Ougrienne, vol. LXVI, Helsinki, 1933.

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is a name bestowed on certain small mushrooms, probably coprini. In France fungi of this genus are known popularly as the *pisse-chien*, and we suspect that the deliquescent ink-caps underlie the other examples that we have cited. The *pisse-chien* of the French becomes *thepixacan* in the langue d'oc: we have found it in Gascon, in Catalan, and in Majorcan, and doubtless it occurs elsewhere. The ending *-can* comes down from the Latin *caninus*, of course. When we go further afield, we discover that in the Arabic spoken by the Sudanese there is a mushroom called the 'tree-of-the-dogs', *shajarat al-kilab*. Arabic scholars have been puzzled by it, but surely the meaning is clear. Indeed, the association of the coprini with dogs is not without justification. Those who care to get to the bottom of the matter will find shrewd and amusing observations on the subject by Camille Fauvel in the *Supplement* to the *Revue de Mycologie* of December i, 1946, wherein this former Commissaire de Police and counter-espionage agent reveals his discovery that the distribution of urinals and of the coprinus atramentarius in the environs of Paris is complementary: i.e., the fungi are seldom found within a reasonable range of a urinal, but abound beyond that range.

In the Kamchatka peninsula there live, among other tribes, the folk known as Korjaks. The word for mushroom in their language is *pion* - yet another example of our word. For more than two centuries the Korjaks have enjoyed a peculiar renown among anthropologists, ever since the Swedish traveler Philip Johan von Strahlenberg discovered that they eat the dried amanita muscaria for its intoxicating virtue. It is to be observed that the Korjaks do not use the word *pion* for the fly agaric. This they call *wapaq*, meaning whale-bone, and here is why. The tribesmen of eastern Siberia bend spits or skewers of whalebone, insert them thus into tallow, freeze the tallow, and then scatter the lumps of frozen tallow for hapless wolves to swallow. The death-throes of the stricken beasts explain the use of the word for the fly amanita, the trigger that sends men into frenzy.¹

North of the Korjaks, in the extreme eastern corner of Siberia, facing Alaska, lie the settlements of the Chukchees, a tribe related to the Korjaks. For 'fungus' they say *pongpong* or *pompong*. This doubling of a syllable is characteristic of the Chukchee tongue. Here, then, we find the same word that we have now followed from the Mordvines in Europe across all of Siberia.

The range of this word of European origin for 'mushroom' is a breathtaking

I. Waldemar Bogoras in his treatise on the Chukchees assumes that the primary meaning of *wapaq* was 'fly agaric', the word being then transferred to the whale-bone spit used in killing wild beasts. He offers 110 supporting evidence. Since words for the divine usually recede from common use and give place to euphemisms, we suggest that the primary sense of *wapaq* was the whale-bone spit and that it was transferred as a vigorous metaphorical euphemism to the psychogenic mushroom. We know of one expression derived from fungal *wapaq*: the spirits of the fly agaric are called *wapdqual(fnu*, but as this means simply 'fly-agaric men', it tells us nothing about the origin of the word.

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thing. What is the explanation? Why should it have stabbed its way across the frozen wastes of the North to the Bering Strait? Unfortunately we know nothing about the use of our word among these remote and primitive peoples. We do not know its precise applications in the fungal world. The lexicons say that in Ostjak and Vogul it designates the fly amanita, and this is certainly true of the *hanggo* of the Yenisei-Ostjaks. We do not know which uses of fungi are in the minds of the people when they utter these words, nor what other meanings they may carry, nor the figures of speech in which they play a part, nor their role in proverbs and folklore. We know nothing of their emotional flavor. They were not borrowed from Russian, for the Russian language possesses no word that could have been their source. We do not know whether they are associated with toads.

Clearly these Finnish and Siberian words come down from one of our three fungal clusters - the *pogge* or the sponge or the pumpkin group - or from a common ancestor. Is it possible that the word sped east long ago, along with a new technique for making fire - the use of punk for tinder? This would suggest that the sponge cluster was the source of the word. (In considering this possibility we must keep in mind that the superior virtue of the fomes fomentarius for tinder was known in northern Europe in neolithic times, some 8,000 years ago. Perhaps punk was one of Europe's earliest export products.) But there is no evidence known to us to support this inviting surmise, which remains to be tested in the field. Not only should every aspect of the words for mushroom and fungus be examined, but the whole vocabulary for the primitive methods of fire-making as well - spark, tinder, flame, dust (soot), and ashes. In the course of our inquiries we have assembled straws of superficial evidence indicating a common phonetic element in the words for tinder, dust, and ashes running all the way from Europe through Siberia into the Algonquin languages. When the English colonists found the Algonquin Indians referring to ashes or dust as 'punk', could they have been confronting their own word, after a journey around the world?

By good fortune we do know that the Korjaks use punk for tinder, though we do not know their word for it. Waldemar Jochelson in his treatise on the Korjaks, page 565, has this to say:

The ancient method of making fire, by means of a drill, is at present employed only in religious ceremonies. Since the fire-drill is esteemed as the most important protector of the family, it may be concluded that the Korjaks looked upon fire as a beneficent agent. There are sacrifices in honor of the fire; fire is also a mediator between man and the deities, since offerings are burned in it... Tinder is prepared from a fungus that grows on the

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stumps of birch trees. The fungus is stripped of its hard outer layer, and the inner spongy mass is boiled in water. Then it is dried, and a light, brittle, and highly inflammable punk is thus obtained.

At this point our excursion into the Arctic would have ended, had not the demon of our curiosity driven us to address a letter of inquiry to Professor L. L. Hammerich of Copenhagen, the authority on Eskimo linguistics and cultural traits. We asked him what word the Eskimos use for 'mushroom'. He replied that from Northwest Alaska to Greenland the word is *pupikl*. Here we seem to discover

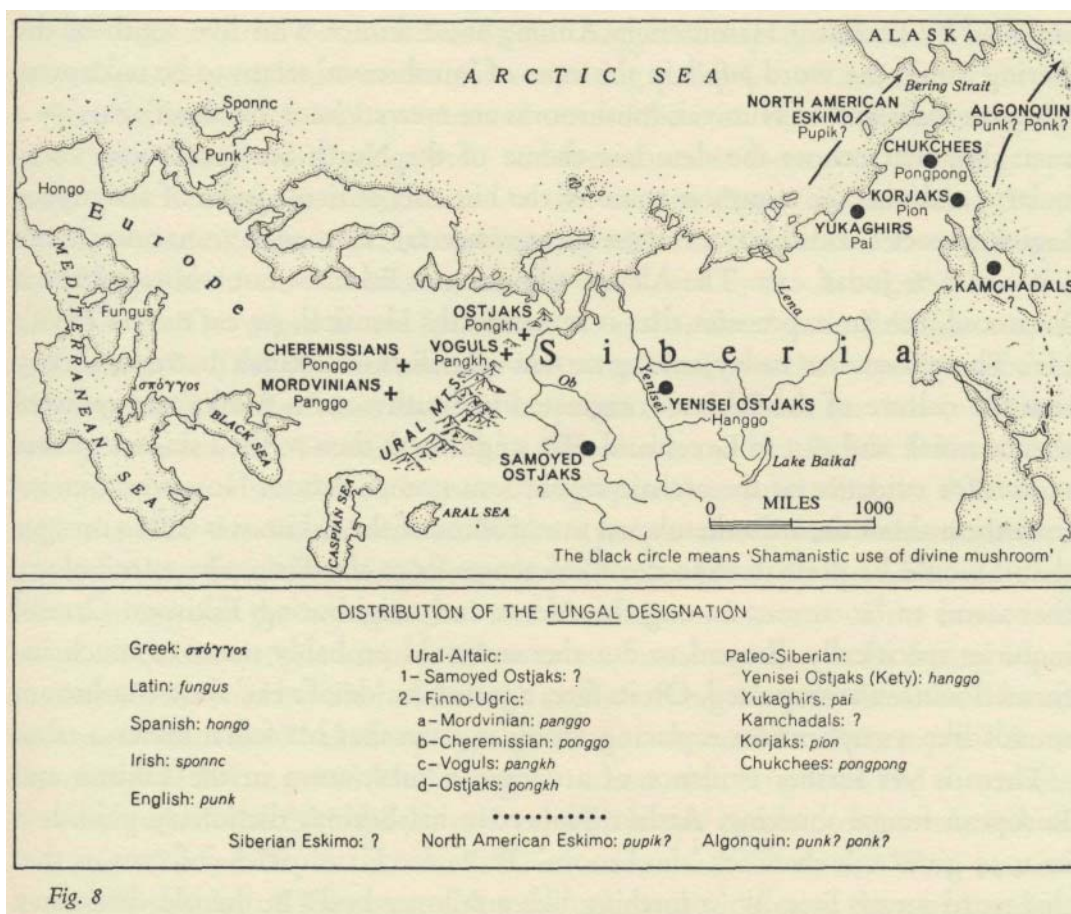


Fig. 8

once again the phonetic unit that by now we know so well. Professor Hammerich went on to say that the word is used for various diseases - in Greenland for leprosy; in the Kuskokwim district of Alaska for an eruption, itch, or small-pox. (The reader will recall that Low German *pogge* is etymologically cognate with 'pox', and the European words are constantly associated with tumors and organic growths. Leprosy is often accompanied by gross physical deformities.) At Nelson Island *pupiki* is a person with small-pox. Then Professor Hammerich continues:

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In the mind of an Eskimo the word *pupik* must needs associate itself with the root *pu*, 'inflate, rise to the surface'; cf., e. g., Greenland *pue*, 'tumor'; *puak*, 'lung'; *poq*, 'inflated bag'; *puisse*, 'seal' (which pops out of the sea); Kuskokwim *pugoq*, 'rises to the surface'; *pugtartoq*, 'the seal emerges from the water for air'; and *pugtaun*, 'inflated bladder'.

The reader who has followed step by step our argument will share the excitement that Professor Hammerich's letters justify. Phonetically and semantically the information that he supplies seems to place the Eskimos with the Europeans in what we might call the same mushroom orbit. What is the explanation ?

Before suggesting certain possibilities, there is additional evidence to submit, also supplied by Professor Hammerich. Among the Eskimos who live south of the Bering Strait, the word *pupik* in the sense of 'mushroom' seems to be unknown. Thus on the island of Nunivak mushrooms are *tumrat ciutait*, or 'devil's ears' — a metaphor that echoes the demonic theme of the North Sea mushroom vocabulary, and also the common name of the *hirneola auricula-judae* of the mycologists, a species of edible tree fungus known in certain European vernaculars as the Jew's ears or Judas' ears. The Aleuts, who are not Eskimos but whose culture is Eskimoid, use an expression that is semantically identical, *qu[^]ani tutusi*, 'devil's ear'. There is current today among certain specialists in Eskimo matters a theory that the culture of the Eskimos originated in Southwestern Alaska and radiated thence north and east to Greenland. We might look then to the Eskimos of that region for evidence of the archaic mushroom nomenclature. However, our information about the attitude toward mushrooms of the Eskimos is still so meager that it would be premature to draw inferences from the distinctive terminology that seems to be current among the Aleuts and neighboring Eskimos. Careful inquiries specifically directed to our theme would probably uncover much information now unsuspected. On its face, a term like 'devil's ear' for a mushroom sounds like a euphemism replacing an older term that has fallen under a tabu.

There is yet further evidence of a common substratum in the Eskimo and European fungal thinking. Arthur Thibert in his Eskimo dictionary published in 1954 gives *tunnuksak* for 'mushroom'. Professor Hammerich informs us that this word means literally 'something like a tallowy boil'. In the old dictionary of Eskimo as spoken in Northern Alaska, by R. Wells and John W. Kelly, published in 1890, the word for 'mushroom' is *ahyo''ok*, where again the sense is 'swelling', 'boil'. Thibert also gives *puyut* in the sense of 'dried mushroom'; the Eskimo word's literal meaning is 'means of making smoke'. Do we not re-discover here the early use of dried mushrooms for generating smoke that gave to English the word 'funk' ? We can carry these recurring themes to a higher plane. In the Eskimo dialect of East Greenland the earliest Danish scholars con-

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cerned with Eskimo linguistics discovered a word for mushroom that is written thus: *tarndydp poqattd*. It has been closely examined by a long series of eminent authorities: John Petersen, William Thalbitzer, L. L. Hammerich, and Erik Holtved. They agree that it means 'the hunting bag of the little robber of souls', the second element, which begins with our familiar syllable *poq-*, being the bag and the first element being derived from *tame*, 'soul'. Here then, exactly as in northern Europe, is an association of mushrooms with psychic or demonic powers.

The Eskimos thus link mushrooms with tumors, small-pox, and inflated bladders, and on another level with psychic disturbance, and phonetically we re-discover among the Eskimos words that suggest our *pogge* cluster. There are several possible explanations for this surprising parallel.

First, the word that we have pursued across Siberia to the Chukchee *pongpong* may have leaped the Bering Strait and spread across the top of America, bypassing the southwestern Eskimos. On the western shores of the Bering Strait live the Asiatic Eskimos, in cultural contact with the Chukchees. To weigh our initial hypothesis, we should ascertain the word used by the Asiatic Eskimos for mushroom. This word is not known to us, and as the Asiatic Eskimos cannot now be reached, the question remains unanswerable. *'Phonetically, pongpong* could become *pupik*, for Professor Hammerich points out to us that the Asiatic Eskimo *saming*, 'wherewith', becomes *sumik* in Greenland, and the Asiatic Eskimo *tamlaxtoq*, 'brings to the shore', becomes *tulagtoq* in Greenland. But the difficulties with the loan surmise are serious. When a people absorb into their vocabulary a word taken from their neighbors, they do so to fill a specific need, and they care nothing for the etymological and semantic associations of the borrowed word. Such associations become dilute or are lost altogether, and *a fortiori* when the borrowed word has filtered through a series of languages. If, then, the Eskimo *tookpupik* from the Chukchee *pongpong*, we are constrained to *divorce pupik* from the cluster of Eskimo words referring to tumors, skin eruptions, and distensible sacs with which the Eskimos themselves, with happy insight, consciously link it.

A second possibility is that the Eskimos once dwelt far to the West, in contact with peoples of European cultural stock, and took over the word and its associations intact, and then preserved them in a singular deep-freeze, until today we of European stock have re-discovered this cultural common denominator with us. Fanciful as such a suggestion sounds, serious scholars such as C. C. Uhlenbeck have discovered numerous verbal roots that seem to be identical in Eskimo and in the Indo-European languages, and have postulated a remote period of cultural contiguity between the two worlds.

Third, we must consider multiple genesis: that is, the possibility that an ono-

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matopceic root could spring up in more than one place in response to an identical imitative instinct. If this were the explanation, we should expect to find yet other peoples as remote culturally as the Eskimos from Europe who will be found to possess indigenous *pupik* clusters of mushroom words.

Each of these explanations, examined severally, inspires little confidence. There remains a fourth possibility.

Let us go behind the common Indo-European language that is the hypothetical ancestor of all the Indo-European tongues of today, to that earlier linguistic stratum from which common Indo-European was itself descended. The archetype of our mushroomic root may descend lineally to us and to the Eskimos, as well as those Siberian peoples that possess it, from the era before our own linguistic family was differentiated from an earlier stock. In this case the Eskimo *pupik* is not a loan word from Indo-European, nor is (s)p(h)ongo a root borrowed by Indo-Europeans from some other linguistic family. We are simply carrying back our linguistic tree to a remoter generation.

On page 109 in a footnote we pointed out that certain philologists consider *fungus* and *σπόγγος* as words of pre-Indo-European origin, taken originally from some lost Mediterranean language. They question the identity of these words with the German *Schwamm* and the Slavic *gamba*. The conjecture that we now offer would reconcile the apparent contradiction. We would concede that in languages remote from the Indo-European family we find true cognates of *σπόγγος*. We would suppose that this word, as it descended through the Indo-European line, assumed a variant aspect in the Germanic and Slavic worlds.

The persistence through many millennia of a recognizable root for the word that signifies 'fungus' would be a remarkable thing. It might testify to the singular importance of the role of the fungal world in the culture of these exceedingly remote ancestors of ours. The religious and mythological and erotic associations of the mushrooms would explain this role, associations that we are still able to detect, though today they fade from men's memories and must be sought by combing the oldest records. Furthermore, these associations are of the very kind that would explain the dichotomy between mycophobic and mycophilic peoples. Things that involve man's deepest emotions are viewed by him through a *mana* of supernatural potency. That which is tabu is both feared and loved, unclean and holy, shunned and worshipped. As the old beliefs slowly faded away, each cultural community, no longer able to maintain alive the balanced tensions of the original involvement, clung to one face or the other of the primitive emotions, either rejecting the mushroom world or embracing the strange growths with a quasi-erotic devotion.

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scholars have not found the derivation of 'mushroom', and therefore the field lies open for amateur inquirers. The word has circulated in English for some five centuries at least, in many forms, and the variant 'musheron' is still often heard in the United States. It is clear that the English borrowed the word from the French language spoken at court in the Middle Ages, the French word surviving in modern French as *mousseron*. Either the Normans or French showed the English for the first time that certain wild fungi could be eaten, and the need for a name for the edible fungi was met by 'mushroom'. In the course of time it has come to designate edible fungi in general and specifically the *psalliota campestris*.

This specific use developed later, after the art of cultivating the field mushroom gave to it unique importance - such importance, indeed, that its French name, *champignon*, superseded *mousseron* as the generic word for mushrooms in France. It used to be thought that *mousseron* sprang from *mousse*, meaning 'moss', but for a long time not a single French philologist has espoused what is certainly a popular etymology, which was first propounded in print in 1651 by N. de Bonnefons, the gardener. It is clear that the present spelling of *mousseron* has come about to satisfy the popular association of ideas. Among the oldest forms of the word in French are two - *moisseron* and *meisseron* - that could not be linked to moss.¹ Both Oscar Bloch and Albert Dauzat arrive at the conclusion that the word is of pre-Latin origin - a convenient catchbasin, in the world of Romance languages, for all problem children of etymology.

Our word is not confined to English and French. Jean-Baptiste Barla, a first-class mycologist and faithful observer, reported that in the Provence, around Nice, the natives say *moussairoun* and *mousselet*.² The Catalans speak of the *moixerno*. The word also appears in a single dialect of Basque, in Lower Navarre, where it takes the form of *motxolon*. Wherever the word is used on the Continent, in French, Provençal, Catalan, and Basque, it designates the species of mushroom known as the *tricholoma gambosum* or *georgii*. The dialectical variants of 'mushroom' in English have been numerous, and among them several stem back to the obsolete French forms: mesheroom, mesheroon, and mishroom.

1. French philologists cite a Latin passage in the 6th century medical writer Anthimus wherein occurs *muissionem*, standing in the accusative case. This would be the oldest citation of our word. But Professor Joshua Whatmough of Harvard has shown that it is an interpolation. Of the seven ms. sources for Anthimus, five that go back in part independently to the archetype do not include the passage in which this word occurs. Of the other two, one is an 8th century ms. and the other refers to an event that took place in A.D. 849. The evidence seems to point to the 9th century for the interpolation.

2. *Les Champignons des Alpes*, Nice, 1888.

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There is a Welsh form, *maesrin* (pronounced 'mice-rin'), which may have been only a bookish word, but which preserves for us the early sound as known to the Welsh when they borrowed it.

Some years ago Robert Graves suggested to us that we consider the Greek word for mushroom as the source of the French and English terms. We think he was right. Our readers will recall that in German *Schivamm* means both fungus and sponge, but that the Greeks limited the corresponding word in their language, σπόγγος, to 'sponge'. For mushroom they used μύκης, whence the science of 'mycology'. The Greek word is inextricably associated with μύζα, which in Latin becomes *mucus*, or when referring to nasal mucus, *tnuccus*. All these words are repulsive for us. For the Greeks mushrooms were mucoid things, slimy growths, a far remove from the Russians' 'fat of the earth'. There is abundant evidence that the Greeks were and remain mycophobes. The evolution of Greek μύκης into the Provençal, Catalan, and obsolete French words is not hard to reconstruct, so far as the first syllable goes.¹

But this does not solve our problem, for we must still explain the ending -(e)ron of the French word. Proceeding on the surmise that it is a suffix, we sought to determine its value by assembling a list of as many French words ending with it as we could find. (It is surprising that in a language so thoroughly dissected as French no one had done this before.) Our inquiry was fruitful. The nouns ending in -(e)ron fall into three groups, according to the purpose served by the suffix. First are the words that designate an occupation:

1. *bucheron*, woodcutter,
2. *forgeron*, blacksmith, and
3. *vigneron*, vine-grower.

There is a second group in which the ending is a diminutive, a variant of the diminutive *-on*, as in *ourson*, little bear, and *raton*, 'little rat'. The variant in *-ron* is used where there is need to preserve the value of the final silent *e* of the original noun:²

1. *aileron*, small wing,
2. *boteron*, small toad,
3. *chaperon*, small headgear,
4. *coteron*, *cotteron*, diminutive of *cotte*, English 'coat',
5. *courgeron*, kind of *courge* or gourd,
6. *laideron*, an ill-favored woman,

1. It is necessary to assume that the Greek word passed through unrecorded popular Latin forms in *mux-* and *mix-*, sound mutations that can be paralleled in other words.

2. *Cuceron*, *cusseron*, the insect, an enemy of vegetable gardeners, seems to have developed from *cusson*, *cosson*, by a false popular analogy with *puceron*.

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7. *lisseron*, *liceron*, diminutive of *lisse*, *lice*,
8. *mancheron*, short sleeve,
9. *moucheron*, gnat,
10. *napperon*, napkin,
11. *paleron*, shoulder-blade,
12. *pelleron*, baker's scoop,
13. *piqueron*, diminutive of *pique*,
14. *pucceron*, plant-louse, aphid, and
15. *vesceron*, a small species of vetch, diminutive of *vesce*.

The third group, which is the one relevant to our argument, consists of the following words, of which no less than four refer to mushrooms:

- | | |
|-------------------------|--|
| 1. <i>auburon</i> , | 8. <i>fumeron</i> , |
| 2. <i>mousseron</i> , | 9. <i>grateron</i> and <i>glouteron</i> , |
| 3. <i>potiron</i> , and | 10. <i>laiteron</i> , <i>laceron</i> , and <i>lacheron</i> , |
| 4. <i>sauceron</i> , | n. <i>liseron</i> , |
| 5. <i>biberon</i> , | 12. <i>longeron</i> , |
| 6. <i>bourgeron</i> , | 13. <i>quarteron</i> , and |
| 7. <i>culeron</i> , | 14. <i>secheron</i> . |

In every instance the suffix adds particularity to a less determinate idea conveyed by the stem. The general condenses into the particular. A 'mass' noun becomes a 'countable' one.

Let us examine these fourteen words one by one. A *biberon* is a feeding-cup or baby's bottle, from the Latin verb *bibere*. A *bourgeron* is a jacket made from a material formerly called *borge*. A *longeron* is a girder that runs lengthwise. A *fumeron* is the half-burnt charcoal that gives off smoke. A *quarteron* is a quadron. *Secheron* is the word used in the mountainous east of France to designate a meadow that is chronically parched. The *culeron* is the 'crupper loop' that passes around the horse's tail. The other words are all names of species of plants. *Grateron* (= *glouteron*) is a kind of briar. *Laiteron* (= *laceron*, *lacheron*) is milk-weed. *Liceron*, from *Us*, is the bindweed or morning-glory. *Potiron* is a species of gourd and a fungus. *Sauceron* is a regional word reported in the Saone-et-Loire for 'mushroom', presumably from the verb *saucer*, to sop or soak or dunk, referring to the wetness of many wild mushrooms. *Auburon* is the most interesting of all. It is current in the East, where the French and German worlds meet. It designates the *lactarius piperatus*, and it comes down from the Latin *albus*, white. Sometimes it is written *oberon*. This is a large, fleshy, white mushroom. In a good mushroom season, when the forest floor is carpeted with an immense number of mushrooms of many kinds, the big, sturdy *oberon* dominates its world, king of its realm. From afar it can be sighted, and as the sun sets and the shadows

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deepen, its brilliant whiteness seems to catch and hold the light a little longer. It is no wonder that Oberon is king of the fairies. Yet so far as we can discover, no one has hitherto recognized the fungal ties of this famous character in French and German folklore, whom Shakespeare summoned to his stage.¹ In Russia the *auburon* or lactarius piperatus is called the *gmzd'*, and, as we have seen on an earlier page, *the gmzd'* plays a role in Russia's fungal folklore that recalls Oberon's. Our common nouns ending in *-(e)ron* are mostly rare and archaic words. Since our etymology for *mousseron* is persuasive only to the extent that we succeed in explaining its suffix, we welcome the abundant additional testimony supplied to us by a different category of words - family names. With these proper nouns lies the primary role of our suffix, and it is precisely here that particularity is of the essence: the general term is reduced in its application to a distinctive family unit. Attributes of physique or personality, occupation, geographical origin, social status - the common nouns and place names become individualized as family names by the addition of *-(e)ron*. Furthermore, in this list we sense the common denominator that links together the three divisions of our common nouns, and find that they all belong really to a single class, not three. Our suffix, in essence, contributes particularity to the primary word. The reader who desires to arrive at the meaning of these proper nouns will consult Albert Dauzat's *Dictionnaire Etymologique des Noms de Famille et Prenoms de France*, published by Larousse in 1951.

Bauberon	Chaumeron	Langeron	Masseron
Biberon	Chauveron	Legeron	Merceron
Boucheron	Chaveron	Lignerion	Moucheron
Bouveron	Cucheron	Manceron	Pailleron
Brosseron	Fougeron	Mancheron	Percheron
Brugeron	Gagneron	Manseron	Rongeron
Chalveron	Goutteron	Marceron	Secheron
Chaperon	Guederon	Marcheron	Vacheron

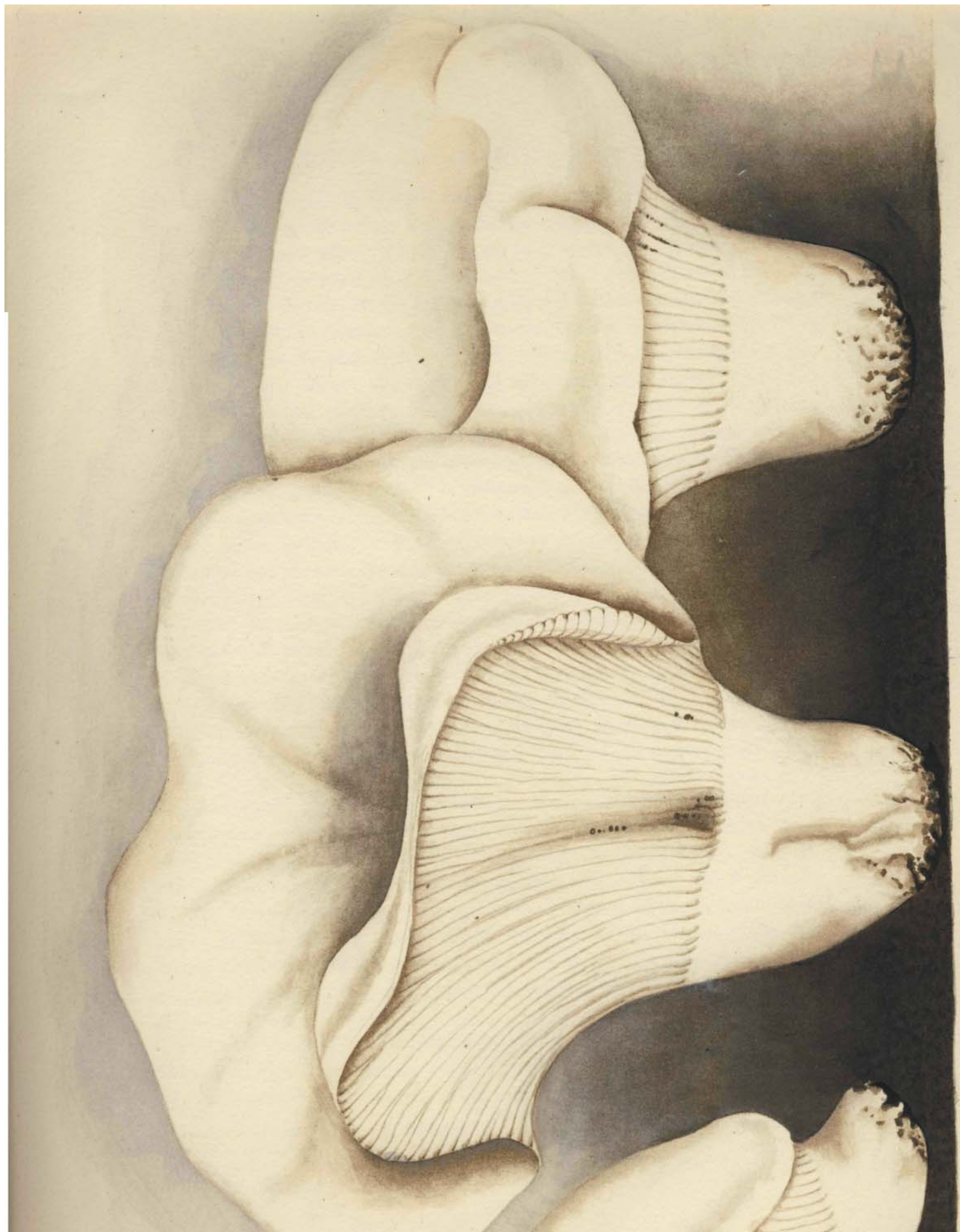
If, then, we are right in our argument, the mushroom or *mousseron* was once, metaphorically, a glob of mucus.² Its original meaning long forgotten, the word

1. Oberon in English is a literary character, without indigenous roots, borrowed from the French, where he appears in Old French in *Huon de Bordeaux*. He is 'Alberich' in the medieval German poem *Ormit*, a name that suggests the German *Alp*, 'elf'. But Jacob Grimm in his *Teutonic Mythology*, London, 1883, vol. n, p. 453, links 'Alberich' with whiteness, from the Latin *albus*, a view that, as we now discover, is reinforced by the vernacular name given to the dazzling-white lactarius piperatus along the eastern marches of the French-speaking world.
2. And also a glob of froth, if our suspicion is right that *mousse*, 'froth', has the same origin. But this word *mousse* and its homonym meaning 'moss' are so tangled together in their histories that we merely mention the possibility without arguing the case.

The obsolete *meckeron*, 'wick', 'little wick', was derived through Latin from Gr. $\lambda\iota\upsilon\sigma\alpha$, ^{an}d is cousin therefore to *meisseron*, *moisseron*, *mousseron*. Surely the obsolete adjective *mescheros*, 'dirtied', 'blackened', has the same

PLATE XXXI

Jean-Henri Fabre. *Lactarius piperatus* Fr. ex Scop.
French (east): *oberon*; Russian: *gruzd'*.



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has shifted in status (as occasionally words do), and from its mucoid origins has become appetizing. We believe that the Basque language offers us circumstantial evidence in support of our theory. As we have seen, in the Basque dialect of Lower Navarre our word appears as *motxolon*, and it carries the same meaning as *mousseron* in French. In the Souletin dialect the same species is the *buxeti*; we trace this also to *mousseron*, for the Romance letter 'm' can become 'b' in Basque; e.g., the Spanish word for 'mill', *molino*, appearing as *borin* or *bom* in certain Basque dialects; also the French word for 'cabinet-maker' or joiner', *memiisier*, becoming in Soule *beniise*. In many other sections of the Basque country, *ziza* takes the place of *motxolon*, designating the tricholoma gambosum and also tending to associate itself with other edible species. Thus it is a precise translation of *mousseron*. The derivation of *ziza* has never been determined. But we discover that in the Souletin dialect of Basque, *zintz* means 'nasal mucus', and is probably a word of imitative origin. Professor Rene Lafon informs us that phonetically *ziza* could be related to *zintz*. We suggest that it is derived from *zintz* or an earlier form of that word, and that it was thus a translation of *mousseron* made at a time when the original meaning of the French word was still present in men's minds. If we are right, *mousseron* appears in Basque as *motxolon*, a borrowed word, in Lower Navarre; as *buxeti*, also a borrowing, in the Soule; and as *ziza*, a translation, elsewhere. Thus, if this argument stands up under scrutiny, we provide a satisfying etymology for the Basque *ziza* and simultaneously buttress our fungal word pattern derived from μύκης.

For 'mushroom' and *mousseron* we have dared to propose an etymology and a latent meaning where scholars have been at a loss. There is another French fungal word, *le cepe de Bordeaux*, where we shall challenge the conventional etymology. The standard sources have accepted the popular notion that *le cepe* is the same word as *le cep de vigne*, 'vine-stock', both descended from the Latin *cippus*, 'stake'. As to *le cepe*, we think the case has gone by default, the philologists having admitted a popular etymology by inattention. The boletus edulis does not suggest a stake, nor has such a metaphor any parallel in the fungal vocabulary of Europe.

We know much about the role of the boletus edulis in the social history of Western Europe. The Romans called it the *snillus*, 'swine-mushroom', a word that apparently survived as *silli* in the dialect of Naples down to the end of

derivation and refers to the wick's snuff. Philologists have been baffled by the origin of *ofndchurer*, 'to blacken with soot', and *mdchuron*, 'smudge' or 'smut' (on the face), 'smudged impression' (in printing). Should they not consider *mecheron* and the wick's snuff as the key to the etymon? The vowel change parallels *tache*, 'stain', descended from the older *teche*.

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the 18th century.¹ In standard Italian it is *the porcino*, 'porcine' mushroom. Why these names? Some say the mushroom in its appearance suggests the swarthy, rotund rear-end of a porker. Some point to its greasiness when cooked fresh: it exudes quantities of viscid fluid that gastronomes associate with rich, melted butter, but that to mycophobes suggests loathsome mucus. When dried the *boletus edulis* tastes like meat, which explains the addiction to it of the monks in the Russian church during the long fasts. We have seen how the Flemings began to eat ceps in the 17th century, a cultural innovation inspired by Italian merchants. The progress of the cep in the kitchens of the great elsewhere was slow. We have combed upwards of a score of French cookbooks of the 17th and 18th centuries and found no mention in them of the cep, though they all speak of morels, truffles, *champignons*, and *mousserons*. Brillant-Savarin ignored it, but he ignored all mushrooms save truffles. The earliest French writers on fungi laid no stress on its culinary virtues. Clusius in 1601 described it without embellishment as a species belonging to his Genus XX of the edible mushrooms. He said the Germans called it *Btiltz*, a Germanized form of the recently borrowed Latin *boletus*. Clearly the word met the need for an appetising name for mushrooms that were being eaten for the first time. Later *Pilz* came to embrace the whole edible mushroom world, and the *boletus edulis* is today the *Steinpilz*. No one seems to have explained why this mushroom is likened to a stone. Do we have here an evasive substitute for a lost '*Schweinpilz*'? Clusius gave *vargdnya* as the Magyar name, and he added that it was obscene. Today this word still circulates but its obscene association is lost. Perhaps it suggested *valag*, 'arse', of which we may have caught an echo in *suillus*. We shall revert to Clusius' curious remark about obscenity on a later page. Just as baffling is his statement that in French the cep in his day was called *materaz*. This is a hapax legomenon that both mycologists and lexicographers have overlooked. In what provinces, in what classes, did it circulate?²

Cepe entered standard French late. Its earliest known appearance in print was in 1791, in Pierre Bulliard's classic *Histoire des Champignons de la France*, where he mentions *cepe* as a provincialism for the edible *boletus*. In 1835 the French Academy placed on it the stamp of its approval by admitting it to the edition of the *Dictionnaire* published in that year. There are regions of France where it is still

1. See Jean Jacques Paulet's *Traite des Champignons*, Paris, 1793, p. 44.

2. Van Sterbeeck in his *Theatrum Fungorum* quoted *materaz* from Clusius, but Jean Bauhin, the French contemporary of Clusius, ignored it. *Materaz* was a variant spelling of *matras*, a familiar word in medieval French. It meant (a) one shape of distiller's flask, and (b) in archery, the particular kind of blunt head for the 'bolt' or arrow used with the cross-bow when the purpose was to stun and incapacitate an enemy or animal without penetrating the armor or hide. We have found no *matras* of either kind that suggests a cep.

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unknown. It entered French from the Gascon dialect, and its diffusion in the 18th century may have been encouraged by a profound man-made change in the ecology of that province. In the late 18th century the French engineer Nicolas-Thomas Bremondier undertook to fix the shifting dunes of the Landes, south of Bordeaux, by planting them to conifers. While ceps are mostly associated with deciduous trees, the variety *pinicola* lives in symbiosis with conifers. Was Bremondier's famous achievement responsible for a surplus of ceps which, funneled through Bordeaux, reached the Paris markets and became the *cepes de Bordeaux* of today?

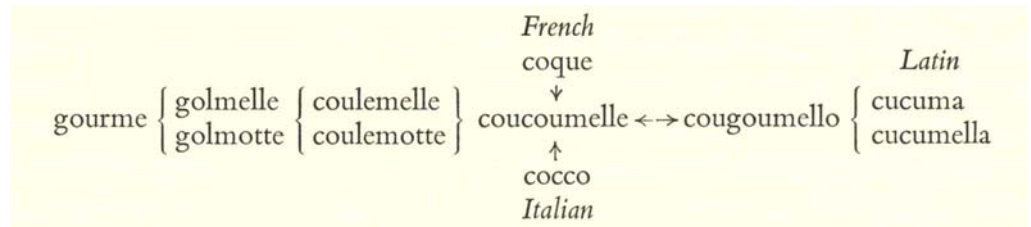
Among the mycophagous Gascons the parent word of *cepe* carries two meanings. It is the specific name of the *boletus edulis* and it is a general term for all mushrooms. Here is one more instance where the dominant edible species has given its name to the whole fungal race. The word in Gascon takes two forms, *sep* and *set*, and this leads us at last to consider the etymon for *cepe*. In Spanish there are two general words for 'mushroom', *hongo* and *seta*. Today in Castilian the two words are synonyms, but from the early dictionary compiled by Sebastian de Covarrubias and published in 1611 we learn that at that time *seta* meant the *hongo de puerco*, i. e., the *porcino* or *suillus*! In short its meaning was identical with the specific meaning of the Gascon *sep* or *set*! The Spanish word circulates up to the very borders of Gascony, and thus the areas of distribution are contiguous. There is a further relevant fact: the word for the *boletus edulis* is not the only fungal term shared by Gascons and Spaniards. A Spanish word for the puff ball, *bejm*, is also the Gascon word, and this points to a common background of the two peoples in mushroomic matters. Juan Corominas traces the Spanish *seta* to a Greek origin, σήπτα, 'rotten things', to which the English word 'septic' is kin. The name for the cep in classic Greek does not survive, and the way is open for us to suggest that σήπτα already carried its mushroomic meaning before it was borrowed by Gascons and Spaniards. It must have been a learned word of physicians and naturalists steeped in the lore of Dioscorides and Nikander, and it would have reached Gascony, with other Greek cultural contributions, from the Greek colonies in the Gulf of Marseilles, ascending the Rhone valley and crossing westward by the water-ways to the Bay of Biscay. We do not contend that the Gascons borrowed *set* from the Spaniards, nor that the Spaniards borrowed the Gascon word, but that both came from the same source, borrowed concurrently.¹ We have pointed out that the Greek μύκης likened

1. For the etymology of Sp. *seta* see Juan Corominas' note in *Romance Philology*, Nov. 1947, pp. 97-100. For *cepe* see Jean Seguy's magisterial treatment of the Gascon fungal vocabulary in vol. I of his *Atlas Linguistique de la Gascogne*, maps 193-201, especially those dealing with *cepe* and *champignon*. In certain sub-dialects of Gascony the terminal *p* of a Latin etymon becomes *ts* in the Gascon plural; e. g., French *coups* appears as *cots*. Our initial

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mushrooms to mucus. Semantically the Greek σήπτα likens the cep to putrid things and to pus. There is a kinship here: thus in French the word *morve*, nasal mucus, according to the most eminent philologists comes down from the same source *asgourme*, 'pus'. The ancient background of *seta* and *set*, of *cepe* and 'cep', is now forgotten, and the mushrooms that they designate have risen to high esteem, like *ntousseron*, but all these words carry concealed the curse of their mycophobic conception. It is unkind, but piquant, at this late date, to expose their original sin. As for the *cepe de Bordeaux*, we believe that all those who relish the innocent delights of pedantry may safely speak, in place of *cepes*, of *setes*; or, to be more precise, since *cepe* is a Parisian misspelling of a Gascon *cep*, we will say *les sets de Bordeaux*.

In certain localities of France the *amanita rubescens* is called *golmotte* and in certain others *golmelle*. Perhaps the root of these words, *golm-* was originally *gortn-*, and if this surmise prove right, then here we have further examples in French of mushroom names nourished on pus. In words of this kind, which live out their lives in humble currency, on tongues of country folk rather than on the written page, remote from the cerebations of book-men, all sorts of 'contaminations' and blends take place, through semantic or phonetic associations that are hard to trace. Take *golmelle* and *golmotte* as examples. Let us assume that *gourme*, 'pus', is their point of departure. By gradations, and probably under the pressure of lateral influences, these words pass through a spectrum of identifiable shadings until they emerge as the Provençal *cougoumello*, already discussed on an earlier page:



We have discovered no evidence that the detached attitude of the Greeks toward the fungi, which they expressed by calling them globs of mucus, was ever associated with toads. But the figure of speech latent in their word suggests certain

supposition that the variation between *sep* and *set* was traceable to this phenomenon collapsed when we discovered from Seguy's maps that the distribution of the two forms did not correspond at all to those sub-dialects. We suggest that the alternation between *p* and *t* in *sep* and *set* marks a variable survival of the *p* and *t* of the Greek etymon σήπτα, plus contamination with the *ccps de vigne*. For the cultural background of Greek words in Gascon and Spanish the authoritative study in Walther von Wartburg's paper, 'Die griechische Kolonisation in Siidgallien und ihre sprachlichen Zeugen im Westromanischen', in *Zeitschr. f. rom. Phil.*, LXVIII, 1952, pp. 1-48. He does not mention any fungal words.

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names for toads current among the northern peoples. The Welsh *llyffant* seems to be cognate with either 'slime' or 'lymph' - it makes little difference for our purpose, for both would refer to the mucoid secretion of the toad's epidermal glands. There was an Anglo-Saxon word for toad, *yce*, which survives to this day through collateral descent in the Low German *utze* and the High German *Unke*. These words appear to be related to the Latin *uvidus*, moist, and are thus semantically parallel to the Welsh term. In the vast reaches of uncharted cultural history-who knows; - the mucus-exuding toad and the glob of Hellenic mucus that the English call a toadstool may have mingled in the thoughts of men.

Now we arrive at another area in Europe's mushroom vocabulary where a theme semantically related to mucus may survive. We refer to the neglected problem presented by the word 'morel'. In French this is the *morille*, in Catalan *murgula*, in German *Morchel*. The Romansch *murachel* or *burachel* (with the stress on the second syllable) is another form. Western philologists assert that these words come to us from the Old High German *morha* and its diminutive counterpart, *morhila*, both of which are known to us only in the sense of 'carrot' or 'parsnip'. The semantic link with carrots or parsnips is an unhappy one and hardly persuasive. The Western philologists who have considered the problem seem not to have stretched their inquiry to embrace the Slavic field. We do not believe that the morel was called a parsnip, nor the parsnip a morel. We believe that both owe their names to the same antecedent metaphor, phallic in inspiration. There is a single name for the morel throughout the Slavic area, and the Russian *smorchok* may be taken as representative of the various forms that the word assumes. Slavic philologists are agreed on its origin. They say its root is *smurk*, and semantically it is associated with sniffing, with resin in the tree, with a water-spout. The Russian verb *smorkat'* means to blow the nose. The Slavic root is derived from a hypothetical Indo-European root, [s]mer, denoting an oily or buttery or resinous or viscid exudate. It is exemplified by the English word 'smear', the Scandinavian *smjor*, meaning 'butter', and the Greek *jiupov*, 'ointment'. If 'morel' and the other Western names for this fungus are not genetically identical with the Slavic word, we are faced with a surprising accidental similarity between the two names for the identical fungal species.¹ Surely a more sensible explanation is at hand. In his beautiful monograph on the aphrodisiacs entitled *Paneros*, Norman Douglas pointed out that both carrot and parsnip

1. The name of the morel seems to have invaded various non-Indo-European languages. Clusius tells us that in his time the Hungarians called this mushroom *szemerchyek*, obviously a borrowing from Slavic. In the 12th century Maimonides writing in Hebrew refers to some sort of fungus, possibly a morel, by a word having the root SHMRQ', which we think must be a borrowing, but precisely whence and when and by what channels?

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were formerly esteemed for their love-inciting virtue, and is it not reasonable to suppose that the Old High German *morha* and *morhila*, like the phallic 'morel', were verbal progeny of the same erotic root?

We have suggested that the specific name in ancient Greek for the morel was *μύκης* a word that we think doubled for 'morel' and 'mushroom' generally. Here let us recall a curious episode told by Pausanias in his *Description of Greece* which reminds us of the idea lying behind *smorchok*. Pausanias offers his readers a legendary explanation for the founding of the famous city of Mycenae. It seems that Perseus chose the site. "Perseus was thirsty, and the thought occurred to him to pick up a mushroom [*μύκης*] from the ground. Drinking with joy the water that flowed from it, he gave to the place the name of Mycenae." This is a false popular etymology for the name of the city, but the story itself, attributing a life-giving fluid to the mushroom, reminds us of *smorchok* and its congeners, and links them semantically, though not etymologically, with the Greek *μύκης*. We feel sure that *μύκης* here meant 'morel'. In the light of the evidence developed on earlier pages, it is singularly appropriate that our eponymous hero should found his race by imbibing strength from the phallic mushroom. Fortifying our argument, Ovid in *Metamorphoses* vii: 392 recalls the legendary origin of Corinth: "Here, according to ancient tradition, in earliest time men's bodies sprang from mushrooms":

... hic aevo veteres mortalia primo corpora
vulgarunt pluvialibus edita fungis.

Fungis here stands for *μύκης* and *μύκης* for 'morel'. The children of Corinth, like the children of Mycenae and of Rome, are sprung from the fungal phallus, from the fire-born tinder quickened into flame by the touch of the divine spark. Corinth was a center of the sun-cult, and it is fitting that the children of Corinth should owe their genesis to the *μύκης*.

We have seen on an earlier page that 'spunk' in English is a name for the seminal flow of the human male, that the ordinary mushroom stipe sunk in the pileus is the symbol of the sexual act, and that the Greek *Π.ΟΥΥΙΣ*; means not only 'mushroom' (or 'morel') but the *membrum virile*. Perhaps the same idea lies enfolded in the Indo-European root of the Russian *smorchok*. There is a Norwegian word, *troll-smor*, or the demon's butter, for the yellowish slime-moulds that are often found spilling over rotten stumps and that scientists call 'myxomycetes'. We find the identical fungal figure of 'demon's butter' in the non-Indo-European Burushaski language: *pfute maltas*, the first element meaning 'demon'. It is our suggestion that 'butter' in such fungal words scarce

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conceals the erotic meaning, corresponding to the erotic vulgarism *frontage* in the French *langue verte*, and the special meaning of 'spunk' in England. In low English 'cheese' is the designation for smegma. In Syriac there is a word for 'mushroom', *fmama*, that C. Brockelman in his *Lexicon Syriacum* (1928) derives from the Greek words for 'ointment', 'unguent': αἰ[ι]ᾶ and οἰ[ι]ᾶ.

In Russian the word *nasmork* (with stress on the first syllable) designates a cold accompanied by a running nose - the French *chandelle*. According to Dal', the Russian lexicographer, impudent Russian seminarists used to refer to an *arkhierejskij nasmork*, 'archpriest's rhinitis', when speaking of gonorrhoea.

The full sweep of the erotic associations of the fungi in men's minds emerges with laconic clarity in Pliny's description of them in Book 22, Chapter 46 of his *Natural History*. Indeed his few words touch on almost all the scatological and genito-urinary aspects of our subject that we have had occasion to uncover, a prescient precis of this aspect of our subject written eighteen centuries ago. The Elizabethan translators, culturally far closer to the Romans than we, sometimes caught overtones that our modern scholars, with all their erudition, miss, and therefore we supply Philemon Holland's expansive rendering of the passage in Pliny, and we underline the words that may refer to the seminal fluid:

Volvam enim terra ob hoc prius gignit, ipsum postea in volva, ceu in ovo est luteum . . . Origo prima causaque e limo, et acescente succo madentis terrae, aut radicis fere glandiferas: initioque spuma lentior, dein corpus membranse simile, mox partus.

And in truth, before that the Mushrome is formed, the earth bringeth forth a certain pellicle or coat first, called in Latine Volva; for this purpose, that the Mushrome should lie in it: and then afterwards shee engendreth it enclosed within, much like as the yolke of an egg couched within the white . . . Moreover, these Mushromes take their first originall and beginning of a slinlie mud, and the humor of the earth that is in the way of corruption: or else of some root of a tree, and such for the most part as bear Mast. *It seemeth at the first, as if it were a kind of glutinous fame or froth:* then it groweth to the substance of a pellicle or skin, and soone after sheweth the Mushrome indeed, bred, formed and consummat within, as beforesaid.

Sensitive as is Philemon Holland's rendering, we think that in Pliny's own words our ear detects, clear albeit faint, a double layer of meaning that escaped the English translator. Pliny mentions no particular kind of tree, such as the oak. He links mushrooms with such trees as bear 'mast', i.e., acorns. The acorns are the thing. His word is *glandiferce*, 'acorn-bearing'. Already in Pliny's time the word for 'acorn' -*glans*- also designated the glans penis. This we know from the writings of his contemporary, the physician Celsus. It was natural for Pliny to place mushrooms, soaked as they were with erotic meaning, at the

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foot of trees yielding equally erotic acorns. The ancient association of ideas survived into the 19th century when John Parkinson referred to the glans penis as 'the nut of the yard'.

At this point in our argument the reader may protest that our interpretation of Pliny's text is over-bold. But before he leaps to his conclusion let him consider the following evidence. We have seen that in the Greek mind 'mucus' and 'mushroom', μύξα and μύκης, were yoked together, perhaps with the morel playing a phallic role as an intermediary. We have seen that the word for mushroom also meant the *membrum virile*, and if our interpretation of the Etruscan mirror is sound, the mushroom and *membrum virile* were intimately associated with the making of fire. We now call to the reader's attention certain further semantic associations with fire that link together the two Greek words. The word for mushroom also meant the half-carbonized end of a wick, which in English is called the snuff- a word with nasal ties. This half charred end of a wick is of course tinder. The Greek word for mucus also meant the nozzle of a lamp. This same Greek word for mucus crops out in Latin as *myxa*, and in Latin it meant 'wick', and we discover that in Latin *fungus* was the snuff of a wick. The Latin word for 'wick' in turn gave to the French their *meche*, and from the French the English acquired 'match'. Why should the match that we strike come down to us from Greek words for mucus and mushroom? Why this persistent association between fire on the one hand, and mucus and mushrooms on the other, with the *membrum virile* also playing a role in the same affair? In low English 'wick' is still potent with erotic meaning, as the English soldier lets us know when he 'dips his wick' or complains that someone 'gets on his wick'. The cap of a morel suggests a burnt clump of tinder, and what is a nozzle but a 'cock'? Both 'nozzle' and 'schnozzle' are variants of 'nose'.

For the burnt end of a candle-wick the Spaniards have two expressions: *moco de pdbilo*, 'mucus of the wick', and *seta*, the word for mushroom that Corominas traced to the Greek word for putrid things. In French the corresponding word is *moucheron*, from *moucher*, meaning to snuff and to wipe the nose. When a lighted candle sputters and gutters because of the presence of a foreign particle, called in English the 'thief or the 'stranger', the French speak of it as the *champignon*; and the French call a running nose a *chandelle*, or candle. In English until modern times the burnt end of a candle-wick was a 'snot', but when this word in its primary sense fell into disrepute around A.D. 1800, its place was taken by 'snuff'. The Danish verb *snyde*, from the same root as the English 'snot', means both to snuff a candle and to wipe the nose; and the Dutch *snotneus* is an old-fashioned oil lamp with a long spout. But in the Germanic languages the fungal

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association seems to be absent. We have mentioned the word for 'mushroom' in Syriac, *s^emama*: we now point out that it carries the additional meaning of 'lamp black'.

Here then is a persistent association of ideas, triangular in design, between mucus, mushrooms, and candles or lamps. Like the candle-wick itself, the ideas are plaited together, weaving in and out in a slow measure down the centuries. It is easy to see why the mycophobic Greeks regarded mushrooms as globs of mucus. But why the lamp nozzle? Why the burnt end of the wicke Why the candle?

Perhaps the reader has already discovered the common denominator that underlies these disparate ideas. Relying on certain straws of evidence, we have conjectured a deep-seated semantic association between nasal mucus and seminal fluid. The primary use of the fungi among the primitive Europeans was for the making of fire, a rite instinct with sexual associations. The Greek member of our 'sponge' cluster, *σπόγγος*, was deprived in Greek of its other meaning of 'fungus', and we discover its normal fungal meanings in [ifoojc;, semantically yoked with the *membrum virile* and a burnt lamp-wick, a word adapted from [Auḷa, meaning 'mucus' and also 'lamp-nozzle'. In the burning candle guttering with heat, in the dripping nozzle of the hot antique lamp, we discover the supreme figure of dynamic sexual metaphor, wherein the discordant ideas of mucus and fire are suddenly and boldly reconciled. In Hungary there are to this day women mindful of their reputation who will refrain from offering a light for a man's cigarette, lest their act suggest an improper invitation. Early in 1955 a late evening television program on channel KABC in Hollywood was abruptly discontinued because of public protests that it offended decency. In it a statuesque blonde called Voluptua would prepare for bed while she chatted invitingly with a man offstage. Just before slipping into her big bed, she would breathe on unlighted candles and they would leap into flame.¹ When Rabelais' Friar John, near the end of Book v, swears by the faith of a Lanterner, the attentive reader has learned to catch the meaning, for Rabelais has made a great play with lanterns and candles in this book, especially in chapter 33, where the Queen is served a huge stiff flaming taper of white wax somewhat red at the end, and everyone else has flaming *chandelles*. 'Heaven knows', says Rabelais, 'what a glorious light they gave.'

As we have already said, the Greeks did not link mushrooms with toads but instead with lamps. In Egypt we discover that lamps, in turn, were linked with frogs. (We seem forever discovering new permutations of the same symbols.) For the Egyptians the frog was a symbol of Hiqit, goddess of birth and rebirth,

i. *New York Herald Tribune*, February 2, 1955, p. 14.

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and in various collections of Egyptian artifacts are to be found lamps in the shape of frogs dating from the early centuries of the Christian era.¹ On these lamps is written in Greek: 'I am the resurrection', and sometimes they bear a cross. They appear to have been artifacts of an heretical sect denounced in the Code of Justinian under the name of Batrachitse, but their batrachian error was certainly of pre-Christian lineage. Just as in Greece the mushroom and the lamp stood for the engendering of life, so in Egypt a similar message found expression in the frog-borne flame. Toads are of the order of frogs, of course. The womb that lies behind certain names for the toad and toadstools in northern Europe reappears in the frog-womb of the Egyptian cult.

Some of the terms of the science of mycology are neo-classicisms, the inventions of modern workers in the field. But others perpetuate ancient usage. In Pliny's text we have discovered that *Volva* was already familiar to him as the designation of the cup out of which some mushrooms grow. Do not the 'ring', the 'Veil', and the 'hymenium' belong to the same vintage? Here are sexual metaphors applied to mushrooms that reinforce our argument, and what an astonishing concentrate of sexuality they all evoke! If we are right about the sponge cluster of fungal words - *Schwamm*, *fungus*, *gomba*, and *σπόγγος* - they enfold within themselves the idea of the womb. The Greeks in *μύκης* substituted for the womb the idea of the phallus. The French, by some quirk in cultural history, followed the Greek example, preferring *mousseron* to a derivative of *fungus*, and in the second element of *champignon* is the same phallic idea latent? Not etymologically, of course, but by phonetic association. Gastronomically the Greeks, as we said, were mycophobes. Their interest in the fungi was less aural and gustatory than erotic. In Arabic the basic word for a mushroom is *futr*, as we saw on page 127, with the initial /b/ by normal mutation often yielding place to *p*. The Arabists seem in no doubt about its etymology: it comes from the verb 'to split', 'to cleave', and they suggest that this recalls the breaking of the earth as the mushroom emerges. But so jejune a notion does less than justice to the virile Arabian mind. Here also we think we detect a metaphor of generation, probably at the deepest layer onomatopoeic in origin, paralleling in sense and sound the Greek *φτύω*, Latin *futuere*, and French *foutre*, though etymologically unrelated to these.

Mushroom, candle, nose: down to today these metaphors have retained their phallic potency. The phallus is called a mushroom, and on certain mushrooms even mycologists bestow phallic names: the phallus impudicus and the mutinus caninus. A learned friend of ours, always on the alert on our behalf

1. See *La Revue Critique d'Histoire et de Littérature*, New Series, vol. vii, 1879, report on sessions held Feb. 21 and 28, pp. 175 and 199.

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for tidbits of fungal knowledge, was thumbing one day through a native Pashto dictionary, when in its pages he came upon a name, not Pashto but Persian, for a mushroom, small and edible but not otherwise identified: *qabih-ker i xarak*, which means the *phallus erectus* of a jackass. A few months later he came upon the exact equivalent in Pashto: *xargina*. In Sudanese we find a mushroom called *zibb al-wata*, 'penis of the earth', and in Persian the identical fungal metaphor in *kuldhi zamin*.

There must be many such terms that have escaped the nets of word-collectors. For metaphorical usage in the reverse order we find ample documentation, notably in the *langne verte* of France as captured and delicately served up in Alfred Delvau's *Dictionnaire Erotiaue Moderne*, an undated work published in Bale. To one Alexander Pothey he ascribes this ditty on the *champignon de couche*

Si son champignon Ressemble
a son piton [nose], Quel
champignon -gnon, -gnon,
Qu'il a, Gandon -don, -don!

In the early days of motor cars the accelerator was called in French a *champignon*, and 'to step on the gas' was *ecraser le champignon*, an expression that French gentlemen hesitated to use in the presence of ladies.

As for la chandelle, elle brule, elle coule, et ensuite elle fond. It is noteworthy that in this erotic sense, only *chandelle* is used and never *bougie* nor *cierge*. Thus when a Frenchman with generous courtesy disclaims knowledge of an alleged adulterous liaison, he is almost certain to remark that il ne tenait pas la chandelle - an observation that refers to either of two degrees of intimate knowledge. Shakespeare knew well this double meaning. In *The Merchant of Venice* Lorenzo addresses his mistress:

Descend, for you must be my torch-bearer. To which that
provocative minx Jessica, fully alert, replies: What, must I hold a
candle to my shames>

That same candle burns fiercely when Falstaff erupts with his thunderous pasan to carnal love in the *Merry Wives*, which he rounds off with a staggering line:

Send me a coole rut-time, Jove, or who can blame me to pisse my Tallow >

I. Is it by coincidence that 'conk' means 'nose' in American slang, and 'shelf-fungus' in the parlance of American woodsmen? See Note i, page 128.

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The burning tallow-candle is the symbol of office carried by Robin Goodfellow when he enters upon the nocturnal rites of his coven, as is shown in the woodcut that we have reproduced on an earlier page. Who can hold a candle to this proud Devil?

A proverb dating back to ancient Rome and Ennius observes that when a lantern gives light to a candle, the giver by the gift is made none the poorer. Innocent in itself, this old saw takes on an erotic sense when Chaucer's Wife of Bath in her *Prologue* admonishes her doddering husband not to begrudge her dalliance with other men. Here the candle is phallic and the lantern is the 'queynte' or pudendum:

For, certeyn, old dotard, by youre leve,
Ye shul have queynte right ynogh at eve.
He is to greet a nygard that wolde werne [forbid]
A man to lighte a candle at his lanterne.

Let us revert to Pothey's suggestion about Gandon's *piton*. He was echoing an ancient folk-belief general in Europe and also in America:

Regarde au nez et tu verras combien Grand
est celui qui aux femmes fait bien. Regarde au
pied pour au rebours connaitre Quel le
vaisseau d'une femme doit etre.

Thomas Wright in *A History of Caricature and Grotesque in Literature and Art*, published in London in 1875, reproduced the figure of a Roman *mimus* as preserved for us in an engraved onyx. A vulgar character given to indecent roles in the low comedy of the time, the *mimus* in this case is adorned with a pendulous nose that speaks eloquently for its lengthy alter ego, and in his whole get-up he seems intended to illustrate the quatrain found in Delvau:

CEil etincelant, Doigt
vif et galant, Nez de
bon augure Et bonne
figure.

Let no reader balk at these bawdy citations, for they serve only to confirm the continuing vitality of the layers of meaning that we suggest for Pliny and Pausanias, and that without these citations might appear to secluded scholars both tenuous and wilfully indelicate. All things sprout from the μύζα and the μύκης, in union with σήπτα.

Yes, σήπτα, the Greek word that has given us the Spanish *seta* and we think the French *cepe*, words whose primary fungal meaning was the boletus edulis.

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Corominas in his note on *seta* pointed out that in widely scattered parts of Spain it has also designated the cunnus.¹ We suspect that in this sense also *seta* goes back to an original Greek usage, and that σήπτα stood symbolically for the female counterpart of the μύκης, 'cep' and 'morel' being sexually complementary. Under its swarthy mons the cep when heated turns soft and yields a mucoid exudate. In the fungal vocabulary of the Gascons we discover the same obscene figure of speech, though a different word is used. This pejorative term is for the boleti that turn blue on exposure to air. Professor Jean Seguy in his Gascon linguistic map 201 reports it as *kunsanmas*, and behind the face of this strange word he discovers *cunnu sagma*, which in French would be *con d'anesse*.

We are far from having exhausted the complex of interrelated meanings. In various parts of Spain *seta* carries the sense of 'swollen lips', 'snout'. With the other erotic meanings before us, we suggest that it is impermissible innocence not to see in these lips the labia majora and ring.²

In Middle Flemish there was a word *sete* that was used in the oath *bi Cools sete*, 'by Nick's arse', corresponding to the Old French *por le cul lien*. Apparently the origin of the Flemish word has not been determined. When we have in mind the sexual associations of the cep in Spanish and the obscene association that Clusius pointed out in Magyar, we suggest that the Flemish word is another semantic extension of our mushroomic word, with a scatological rather than an erotic emphasis.

In Old French we also find a word *sete*. It survives in seven or eight citations. Its meaning has never been certain. It was used always as a simile for stench: the leper's boils stink like *sete*. In recent years several scholars have examined the word and suggested that it might mean 'excrement' or 'latrine' or 'privy seat' or 'arse'. One of them linked it with the Flemish word. Surely here also we discover our mushroomic word, in its scatological phase. If we are right, the word was circulating in French seven centuries ago, disappeared, and then re-entered as *cepe* in the 18th century.³

Today in southern Europe the fig is used metaphorically as the *boletus edulis*

1. For an analogy among the Quiche Indians of Guatemala, see p. 280.

2. The basic Slavic word for mushrooms, which survives in Russian *asguby*, means 'lips' in that language today, with *gubka* meaning 'sponge'. The primary sense of 'mushrooms' also lingers on, but for this meaning *griby* is ordinarily used in the standard language.

3. For our case to be valid, the value of the vowel in Old French *sete* must have been *e*, and this is what it was. We know this by the variant spellings *seite* and *sette* in the mss. We also know it by the words with which it was made to rime in verse :fete from Latin/arfwm, degete from Latin jactare, neste from Latin nitidus. We postulate the missing π of σήπτα. For discussions of Old French *sete* see Erik von Kraemer's critical editions of two 'Miracles' of Gautier de Coinci, *Du drc qui fatne espousa et puis la lessa*, 1950, p. 114, and *De la bonne enpercris qui garda loiaument sen manage*, 1953, pp. 244-5, both published in Helsinki in the *Annales Academics Sdentiarum Fennice*; also see the review of the latter in *Speculum*, Jan. 1955, p. no, by Professor Urban T. Holmes.

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used to be. To the mushroom and fig we must add the third of the trinity, the medlar, that fruit which is properly enjoyed only when rotten ripe. Down to Shakespeare's time it was known also as the openarse, a name that survives in dialectical use until now. Shakespeare played with the words in what are perhaps his most scabrous lines, in Act n, Sc. i of *Romeo and Juliet*, the lines that are said to have prompted Logan Pearsall Smith, in his little book on Shakespeare, to exclaim how lucky it was that only specialists sensed the range and depth of Shakespeare's indecencies:

'He can't mean that', the shocked reader cries out; but oh, my dear reader, he does mean it, and his meaning, if you are a nice person, will make you blush all over.

[*On Reading Shakespeare*, p. 9]

But Shakespeare was not inventing his imagery. He was drawing on a fund of erotic symbolism of immemorial antiquity. In English the word 'medlar' was re-shaped to pun with the verb 'to meddle', in the erotic sense now little used; but etymologically medlar was identical with the French *nefle* and the Spanish *nispero*, and all three descend from the Greek μέσπιλον, where the philologists stop, saying they find no earlier root. But surely the Greek word, broken down into its two elements, incapsulates our same erotic metaphor, meaning 'amidst the hair', where the second element, πιλον, is the word that comes down to us in the mushroomic 'pileus'. Just as the erotic association of the *boletus edulis* seems to have passed over to the scatological in Flanders and France, so the *nefle* becomes the *cul-de-chien* in the east of France.

When Corominas hit on σήπτα as the etymon for *seta*, he may not have divined the nest of felicitous semantic associations that support his discovery. The Greek word belongs to a cluster that includes σηφ, the designation of a poisonous serpent. The Greeks believed that mushrooms and serpents and the holes of serpents had an affinity for each other, just as the peoples of northern Europe link mushrooms with toads. In the Dorian dialect we discover the variant σάπω, identical phonetically though not semantically with the Spanish word for 'toad', *sapo*. We submit that just as the Italian *scorzona*, 'poisonous serpent', gives us the Spanish *escuerzo*, a second word for 'toad', so the Greek word offers us a parallel herpetological metamorphosis.¹ The snake-mushroom association of Greece and

i. The philologist Meyer-Lubke in his *Romanisches Etymologisches Wortennuch* dismisses out of hand σάπω as an etymon for Sp. *sapo*, but perhaps here, as elsewhere, his fiat calls for re-examination. The obstacles to our etymology are two-fold, phonological and cultural. (In Spanish the names of plants are often of Greek origin, but not animals.) But philologists should give full weight to the *mana* in which all words relating to toads were bathed in the early centuries, and such words, subjected to pressures of *tabu*, commonly exhibit irregular word-histories. Until the philologists find positive evidence favoring an alternative etymology, they should not close their minds to the semantically felicitous Gr. σάπω. Whether the Basque *apo*, 'toad', is borrowed from Spanish or (as Karl Bouda surmised) is related to apxw, the word for 'frog' in the Caucasian language known as Svanetian, need not concern us here.

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the Indie world, with all its baggage of associations, becomes the toad and toadstool glyph of the West. With all these symbols woven together, we are hardly surprised when we discover that Emile Boisacq in his Greek etymological dictionary links the Greek words that we are now discussing with the Sanskrit *kydka*, 'mushroom'.

As for phallic 'noses', surely nowhere in literature is there another such apostrophe to them as Laurence Sterne composed in Part iv of *Tristram Shandy*, along with the chapters that lead up to and away from that noble excursus. Here indeed is a savory dish of salacious mushrooms, a display of candles enflamed. The baby Tristram, we learn, had got his 'nose' smashed at birth, whereupon his father, all disconsolate, had embarked on an exhaustive study of 'noses' and their sizes. He read Erasmus, with scant satisfaction, and then turned to the authors that had concentrated on his topic, to wit, Prignitz, Scroderus, Andrea Paraeus, Bouchet's *Evening Conferences*, and finally the unrivalled Hafen Slawkenbergius, who in the course of his stupendous opus pauses at one point to recall how for a full month all Strasbourg, both the Lutheran and Catholic factions, had once been set by the ears because of a certain long 'nose' and the awe and incredulity with which everyone, of every age, in every walk of life, of low and high degree, viewed its dimensions.

In a paragraph of concise and damning irony Tristram describes the monumental 'nasal' monograph of Slawkenbergius, and what he says causes us to tremble, for his words are equally applicable to this our own beloved treatise. If the reader will substitute us for Slawkenbergius, and mushrooms for the noses that are their metaphorical synonyms, he will learn what we consider a truthful and humiliating appraisal of our own enterprise:

And to do justice to Slawkenbergius [says Tristram], he has entered the list with a stronger lance, and taken a much larger career in it than any one man who had ever entered it before him, and indeed, in many respects, deserves to be ennich'd as a prototype for all writers, of voluminous works at least, to model their books by - for he has taken in, Sir, the whole subject - examined every part of it dialectically - then brought it into full day: dilucidating it with all the light which either the collision of his own natural parts could strike - or the profoundest knowledge of the sciences had impowered him to cast upon it - collating, collecting, and compiling - begging, borrowing, and stealing, as he went along, all that had been wrote or wrangled thereupon in the schools and porticos of the learned: so that Slawkenbergius his book may properly be considered, not only as a model - but as a thorough - stitched DIGEST and regular institute of *noses* [that is, *mushrooms*], comprehending in it all that is or can be needful to be known about them.

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Defying Tristram, we return to trie 'long nose'. When a German macht eine lange Nase, he is doing what a Frenchman does when the latter fait un pied de nez, for in this expression the Frenchman speaks not of a pedal extremity but of twelve good inches and true. For the same rude gesture the Englishman says that he cocks a snook, and the American thumbs his nose. On July 4, 1936, a certain Nazi official known as Herr Greiser drew world attention to himself by thumbing his nose at the League of Nations in Geneva. The correspondent Vernon Bartlett in his dispatch to the London *News Chronicle*, using the English idiom, declared baldly that the man had 'cocked a snook'. There followed a lively discussion in the British press. Winston Churchill used the vulgar term in Commons, and thus it gained a nosehold in Hansard. For a month readers of *The Times* addressed letters to their editor about the episode and the gesture, letters urbane and amusing, but sadly genteel. Only the most knowledgeable and perceptive reader could have detected the obscene inspiration of the antique gesture. Yet in those circles where low words pass as common coin, the fleeting passage of thumb and fingers across the nose finds its natural accompaniment in two terse English syllables that tell the story. Here once more we come up against that *chandelle*, that *champignon*, that *pied de nez*, of the vulgar Roman mimus. The 'snook' is a pendulous appendage. From the main body of the Holy Isle of Lindisfarne there stretches out a lengthy promontory, and we understand, when we look at the chart, why the Northumbrian folk know that promontory as 'The Snook'. He who cocks a snook cocks a 'nose'.

If there be those who are sceptical of this meaning, let them read Chapter xix of Rabelais' *Pantagruel*, wherein Panurge and the Englishman engage in a unique colloquy. As neither speaks the other's language, the conversation goes forward with gestures, in the presence of the villagers, who follow it with rapt attention and the enjoyment that is the proof of understanding. Panurge starts off by cocking a snook at the Englishman, who replies in kind. Never have there been more eloquent performances of the ancient sign, nor description thereof put on paper with such solemn elaboration of detail. Here is Rabelais' text, which we offer with only one further comment: where Rabelais speaks of *la pinne du nez*, W. F. Smith in his admirable translation hit on 'the gristle of the nose', an inspired rendering, since in certain English dialects 'gristle' means 'nose' and also the *membrum virile*:

Panurge soubdain leva en l'aer la main dextre, puis d'icelle mist le pouce dedans la navire d'icelluy coste, tenant les quatre doigtz estendus & serrez par leur ordre en ligne parallele a la pinne du nez, fermant l'ceil gausche entierement, & guignant du dextre avecq profonde depression de la sourcille, et paulpiere. Puis la gausche leva hault, avecques

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fort serrement & extension des quatre doigtz & elevation du poulce, & la tenoit en ligne directement correspondante a l'assiete de la dextre, avec distance entre les deux d'une coubdee & demie. Cela faict, en pareille forme baissa contre terre l'une et l'autre main: finalement les tint on milieu comme visant droict au nez de l'Anglois.

. . . Lors feist l'Anglois tel signe. La main gausche toute ouverte il leva hault en l'aer, puis ferma au poing les quatre doigtz d'icelle, & le poulce estendu assit sus la pinne du nez. Soubdain apres leva la dextre toute ouverte, & toute ouverte la baissa, joignant le poulce au lieu que fermoit le petit doight de la gausche, & les quatre doigtz d'icelle mouvoit lentement en l'aer. Puis au rebours fait de la dextre ce qu'il avoit faict de la gausche, & de la gausche ce que avoit faict de la dextre.

Panurge suddenly raised in the Air his right Hand, then placed its Thumb within his Nostril on that Side, holding his four Fingers extended and closed in their order in a Line parallel with the Gristle of the Nose, shutting the left Eye entirely, and blinking with the right with a profound Depression of the Eyebrow and Lid; then he raised the left Hand aloft with hard Clinching and Extension of the four Fingers and Elevation of the Thumb, and he held it in a Line directly corresponding to the Position of the right Hand, with a Distance between them of a Cubit and a half. This done, in like form he lowered towards the Earth both one and the other Hand; lastly, he held them in the Midst as though he were aiming straight at the Nose of the Englishman.

Then the Englishman made a Sign like this: His left Hand wide open he raised high in the Air, then closed into his Fist the four Fingers thereof, and placed the Thumb extended on the Gristle of his Nose. Suddenly afterwards he raised the Right wide open, and while wide open lowered it, joining the Thumb at the Place where the little Finger of the left Hand closed, and the four Fingers thereof he moved slowly in the Air; then reversing them he did with the Right what he had done with the Left, and with the Left what he had done with the Right. [Translation by W. F. Smith]

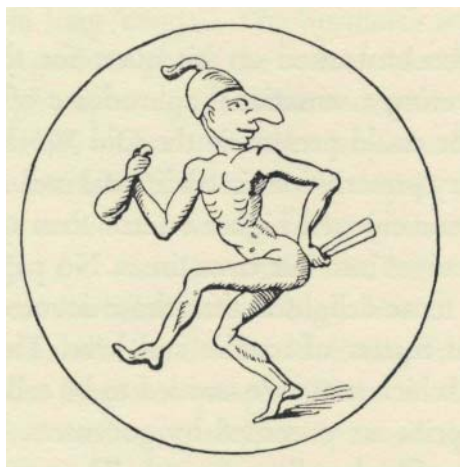


Fig. g ROMAN TOM FOOL

II THE SECRETS OF THE

TRUFFLE

It might seem that by now we had exhausted the erotic imagery of the fungal world, wherein fire, mucus, noses, candles, and mushrooms dance together in a throbbing surrealist fandango, the whole obscene performance conducted inside the uterine envelope of the primeval *gamba*. But not so. We have yet to speak of truffles.

The Greeks used various words for underground fungi, but we think we can prove that the *ύδνον* was our truffle. In the Morgan codex of Dioscorides there is a miniature accompanying the section on the *ύδνον* that gives us our earliest pictorial representation of a *tuber* buried in the earth, and an excellent representation it is.

The truffle in Latin was the *tuber*, which took the form of *tufur* in an Oscan or Umbrian dialect. The Romans knew various kinds of *tuber*. The most esteemed were from Africa, and were probably not true truffles but an underground fungus known to science today by the name of *terfezia*. From the Latin word came the French *truffe*, the Spanish *trufa*, and the English 'truffle'. From a form supposed to have been *terrae tufur* the Italians arrived at the modern *tartufo* and a diminutive *tartuffola*. The surprising thing is that this last word turns up in German as the name for the potato, *Kartoffel*, and from there spread eastward throughout the Slavic lands, until today half of Europe calls the potato by the word that originally meant 'truffle'! In our view the explanation for this curious transfer of meaning lies in the preoccupation with aphrodisiacs of 16th century Europe.

When Ponce de Leon embarked on his quest for the Fountain of Youth, he was bent on discovering a sensational aphrodisiac of lasting virtue. What a prize would be his if he could present to the Old World a miraculous bath to supersede all the amatory prescriptions in traditional use! Among those traditional inciters to venery none enjoyed higher esteem than truffles, and indeed this reputation of theirs survives into our own times. No pages in Brillant-Savarin's *Physiologic du Gout* are more delightful than those devoted to a judicial weighing of the evidence in this matter of truffles and love. There are many kinds of subterranean fungi, of which some are entitled to be called truffles; and of these true truffles, a few species are esteemed by gourmets. In Spanish, *trufa* is the name given to a truffle of high culinary worth. There are two other terms used generally for the underground fungi: *turma* and *criadilla de tierra*. These are both interesting, expressing as they do the aphrodisiacal virtue attributed to the whole

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tribe of underground fungi. *Turma* in Catalan means 'testicle', and in Spanish it means both 'testicle' and 'truffle'. It is an old word, probably of pre-Roman origin, coming down from the same Indo-European root 'tu' that gives to Latin *tuber* and *tumor*, the idea of organic swelling being inherent in them¹. *Criadilla* is the standard word in Spanish for 'testicle'. It is the word used for lamb's fries, the French *amourette*. The Spaniards' words for the truffle reveal the precious virtue that these earthy growths were supposed to possess.

Immediately after the Spaniards fell on America in the 15th century, they discovered in the New World first the sweet potato¹ and then the potato, the *batata* and the *papa*. They found the *batata* in the Antilles, probably in Hispaniola: the word first appears in 1516, a borrowing from the Taino Indians who were then living in the Greater Antilles and Bahamas. (Their name should be pronounced in three syllables, as though written 'Taino'.) The Tainos deserved a kinder fate than was theirs: they and their language are now dead these many generations, and few today know even the tribal name of these first victims of the invaders from Europe. The Tainos possessed a tongue belonging to the Arawakan family of Indian languages, which were spoken by tribes scattered at the time of the Conquest all the way from Florida and the Bahamas on the north through the Greater Antilles and across the tropical belt of South America as far south as what is now known as Matto Grosso. These Tainos of the Islands were a gentle folk: they seemed to lend verisimilitude to the medieval dreams of a Golden Age, and gave impetus to the notion of the Noble Savage that was destined to captivate intelligent men in the Age of Reason. The blameless Taino cultivated sweet potatoes and maize, smoked tobacco, slept in a hammock, and plied the sea ways in long 'canoes'. The Spaniards remarked on the uniformity of the Taino language throughout the various Islands - clearly in the Taino world the sea was a highway to speed communications and not an insulating barrier. Today even scholars often confuse the winsome Tainos with their ferocious enemies, known variously in the 15th century as the Caribs or Calibs or Canibs, a race of savage warriors who when the Spaniards arrived had already seized the Lesser Antilles and were harassing the Tainos on the larger islands. The Europeans quickly overwhelmed them both. But all unawares, by a natural filtering of the Indian vocabularies, the world distinguishes to this day between these two lost and almost forgotten peoples. From the language of the Tainos we possess a legacy of five common and friendly words: potato, maize, tobacco, hammock, and canoe. From the Canibs came our 'cannibals', and the bestial

I. We are familiar with the evidence indicating prior knowledge of the sweet potato in Polynesia, which has stirred up discussions that do not concern us.

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Caliban whom Shakespere placed in the still-vex'd Bermoothes was the literary scion of the Calibs.

The Tainos certainly did not attribute aphrodisiacal powers to the *batata* or sweet potato. They could not have been under illusions about this humble vegetable, so commonplace for them. But the Spaniards, obsessed by the idea of aphrodisiacs, were quick to discover in the *batata* a new and more potent truffle. (Were they under a temptation to hold the novel food to blame for their excesses with the native womenfolk?) A few years later they discovered the white potato in the Andean highlands, the *papa* as it was called in Quechua, the language of the Inca and his people. Now the story repeats itself: Agustin de Zarate, in his classic account of the conquest of Peru, published in 1555, informs his readers that the white potato is like the *turma de tierra*, 'earth's testicle', the truffle of precious virtue:

... y los indios comen unas rakes que llaman *papas*, que son de hechura y aun casi sabor de turmas de tierra. . . [BOOK, in, Chap. 12]

This work was promptly translated by Thomas Nicholas and published in London in 1581. Since truffles were unknown to the English, we were eager to see how the excellent Nicholas met his difficulty in rendering the sentence where they are mentioned:

... The Indians of this province eateth certaine Rootes called *Papas*, whiche are verie like bothe in makynge and taste Turnepes.

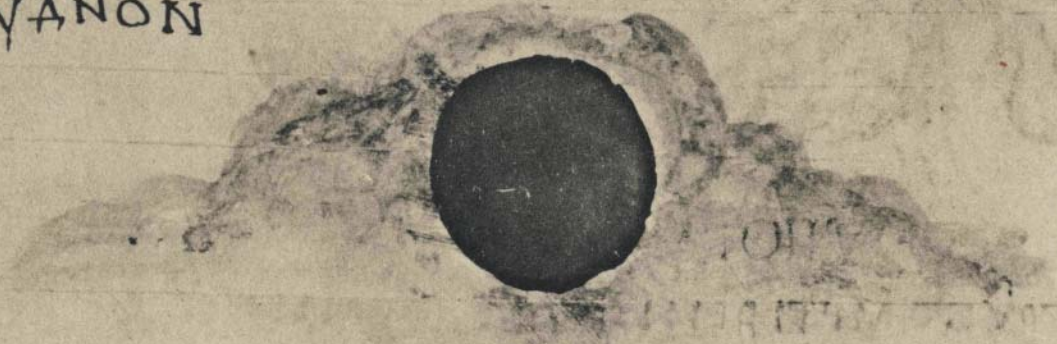
How the humble turnip is here exalted, and the truffle humbled! Were truffles ever so grossly maligned before or since?

Shortly after the *batata*, the Spaniards brought back from the New World the white potato, and from Spain it reached Italy before 1588, where it was called *taratouffli*, the Italian word for 'truffles', a translation of the Spanish name but without the strong erotic association of *turmas*. Quickly thereafter it appeared in the Low Countries, Switzerland, and Germany, and then in France. It arrived in England after the sweet potato but before the end of the century. The two vegetables became deeply entangled in verbal confusion. In Spanish-speaking America the white potato is widely known to this day as the *papa*, a name clothed with all the rights of chronological and topographical primacy. But this word took no hold in Europe and *batata* served for both vegetables, finally in England attaching itself for good to the wrong plant. The Spaniards compounded the confusion by also bestowing on the new vegetables their own name for truffles. To this day in some parts of Colombia potatoes are *turmas* or

χαρμαχουλιω. ταυτη εστὶ ἀφύλλου. καὶ τὴν λεβανωζήραιμ.
 καὶ δίδουομεν μβλικράτου. ἐφάρμουλῃ. καὶ ἡδὲ αὐτοῦ τουλια
 παροισ: ὑδωρ καὶ φλόμα ἄγ. ἰδίωσδὲ ὀρθο-προϊμοῖσ ἀρμῶ
 39. καὶ ἑσπλημῆσαισ. καὶ τοῖσ παριμάρωσ ἀσθῶμ:

ὙΑΝΟΝ

الحان



ὙΑΝΟΝ. ΤΟΝ ΑΝΑΖΑΡΒΕΩΣ:—
 Ὑδρομρίζα ἄγ. παριφθρησ ἀφύλλου. αἰανουσ. ὑποζαρωθῶ
 σαροσ. ὀρυττομέρη. ἄγ. μδὲ ἑδωδῆμοσ. ἐφ. σ. κ. καὶ αμῆ ἄ
 σθ. ο. μέρη: *

PLATE xxxn. Tuber. Miniature from a loth century Byzantine codex (No. 652) of Dioscorides.
 New York, The Pierpont Morgan Library.

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'testicles', and in Spain they were known as *criadillas* and *trufas*. In the dialect of Aragon *trufa* has been reported in the form *triunfa* - a popular malformation that suggests the amorous triumph assured to the hopeful consumer of *criadillas*.¹

For a time potatoes remained a rarity, priced high in keeping with the virtue attributed to them. Their appearance in England points up a curious cultural phenomenon. Reaching England by way of Spain, both kinds of potatoes while in transit assumed like changelings the amatory reputation of the truffle. Thus it came about that England took delivery of America's gifts with a Spanish billing, never suspecting that the humble vegetables from the New World were now sailing on a false invoice, their genuine virtues lost from view in the resplendent aura befitting a newly discovered and miraculous aphrodisiac.

The craze for aphrodisiacs seized England too. Falstaff in *The Merry Wives of Windsor* invokes them. "Let the skie raine Potatoes", he exclaims, and "haile kissing-Comfits, and snow Eringoes", these latter being the candied root of the sea-holly, known to science as the *eryngium maritimum*. Caviar in Elizabethan times was yet another erotic stimulant, as Sir John Harington, godson of the Queen, reminds us in his unabashed epigram 'Against an Old Letcher':

Since thy third cariage of the French infection
Priapus hath in thee found no erection: Yet eatst
thou Ringoes, and potato Rootes, And Gaueare
[caviar], but it litle bootes. Besides at thy beds-
heads', a bottle lately found, Of Liquor that a
quart cost twenty pound.

For shame, if not more grace, yet shew more wit,
Surcease, now sinne leaues thee, to follow it. Some
smile, I sigh, to see they madness such That that
which stands not stands thee in so much.

Those 'potatoes' in Shakespere were certainly sweet potatoes; in Harington, we are not sure.

For almost a thousand years after the fall of Rome, there seems to be no mention of truffles in surviving documents.² In the 13th century Albertus Magnus

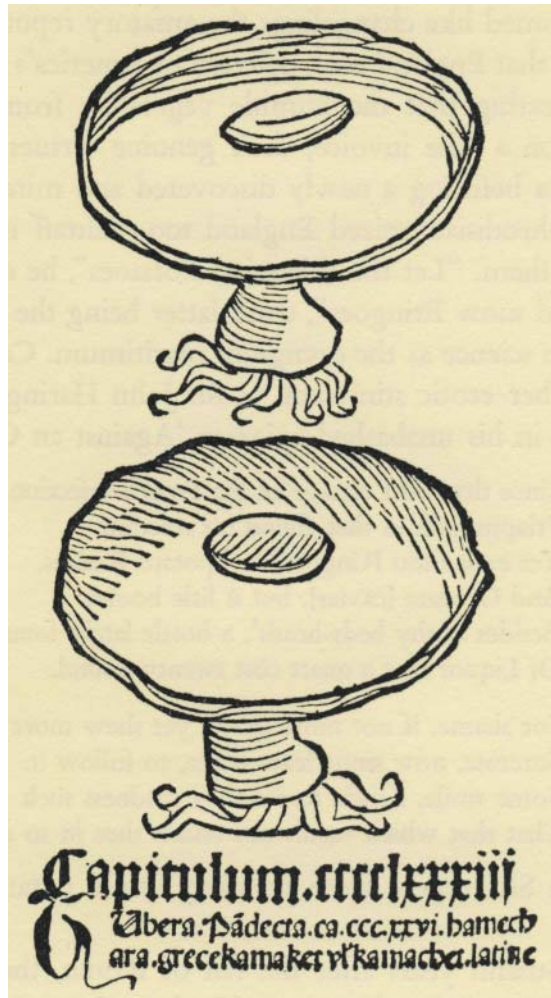
1. We are indebted to Professor Juan Corominas for the etymology of *turma*. For the early usage of names for potatoes and sweet potatoes, there is a beautiful monograph by Pedro Henriquez Urefia, *Para la Historia de los Indigenismos*, published by the Institute de Filologia, under the auspices of the Facultad de Filosofia y Letras of the University of Buenos Aires, 1938, to which Professor Yakov Malkiel called our attention. See also entry under *Criadilla* in C. Torres Fornes' *Sobre Voces Aragonesas usadas en Segorbe*, Valencia, 1903. But neither Henriquez Urefia nor Torres Fornes mentions the erotic theme injected into the potato nomenclature by the Spaniards. The early references to the potato in the herbals are fully discussed by Redcliffe N. Salaman in his *History and Social Influence of the Potato*, Cambridge University Press, 1949.

2. We except of course the references in copies of the ancient authors. The reference in the *Etymologies* of St. Isidore of Seville is no more than a repetition of ancient sources.

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speaks of them in *De Vegetabilibus*, but hesitantly and vaguely, and without reference to aphrodisiacal properties. This vagueness seems not to have been accidental. In the *Hortus Sanitatis*, printed in Mainz in 1491, the artist who made the woodcuts showed more courage than discretion when he illustrated the section on the *tuber*. Never has there been a more grievous misrepresentation

Fig. 10
From *Hortus Sanitatis*,
Mainz, 1491.



of a fungus. We know not whether Albertus Magnus and he had never seen a truffle, or whether, knowing truffles, they failed to identify them with the Latin *tuber*. In the earliest of printed cookbooks, *De Honesta Voluptate*, published in Rome in the middle 1470's and attributed to Bartolomeo de' Sacchi called Platina, there is a short section on truffles. The author speaks of those that come from Africa and the Near East, and then he refers to the species that sensual men of fashion consume to whet their appetite for love-making. With an amusing lack

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of humor he goes on to observe that if this is done for procreation, it is praiseworthy, but if for debauchery, as is the case (he says) with many idle and intemperate persons, it is to be altogether despised. No trace of scepticism diluted the faith of this author in the peculiar virtue attributed to truffles. Doubtless there are earlier references to these as aphrodisiacs, but we have not come upon them.

By the 16th century the fashion for truffles was at its height. They reached this peak of esteem at the moment when potatoes arrived from the Andes, via Spain. The two were confused in Spain, as we have seen, and it is hardly surprising to find that they came to be confused in France, Italy, and Germany. *Tartufi bianchi* has been an alternative designation for potatoes in Italy down to recent times, a use of *tartufo* that is facilitated by the supremacy in Italy of a white truffle, the tuber *magnatum*. This is the truffle that in Italian restaurants is commonly served raw, in thinnest slices. It suggests the flavor of garlic, but unlike garlic does not repeat itself. Across the Alps in the Dauphine, the peasants in their patois have been reported in modern times as using the term *triffe niere* to designate both the truffle and a kind of potato with a purplish flesh.¹ In Germany there is a common fungus, with white flesh, about five inches in diameter, that grows either half-buried or just under the ground in oak forests. It is aromatic and edible, and mycologists know it as the *choiromyces meandri-formis* - the meandering pig-fungus. It looks like a potato, and the initial confusion between the familiar fungus and the novel potato must have contributed to the permanent hold of the word *Kartoffel* in Germany, whence it spread with the potato in due course to Scandinavia and the Slavic lands. In turn the Russians carried the word across Siberia and to the Eskimos of Alaska, where in various dialects of the Eskimo language we find the potato of the Andes called by names that reach straight back to the *tuber* of Pliny: *kaltu:jilaq* and *kaltu:Jaq* and *kaltuvaq* and *kaltu:xaq*?

That initial confusion of potatoes with truffles which began in Spain in Renaissance times has never completely died. Van Sterbeeck surprises and amuses the modern reader when in his *Theatrum Fungorum*, a work exclusively dealing with fungi published in 1675, he devotes a section to potatoes and other members of the nightshade family! If the reader will examine again the frontispiece to Van Sterbeeck's book, which we reproduce on Plate XXVIII, he will discover among all the mushrooms one basket that is spilling potatoes on the ground. In

1. See *La Truffe*, by Adolphe Chatin, Paris, 1892, pp. 303 ff.

2. See L. L. Hammerich's paper on 'The Russian Stratum in Alaskan Eskimo', *Slavic Word No. 3*, Dec. 1954, published by The Linguistic Circle of New York, p. 409.

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Russia down into the present century the Old Believers of the Moscow region were still rejecting potatoes, which they would spurn as *sobach'i mude*, dog's testicles; this was recorded in 1915 by Roman Jakobson in the neighborhood of Vereja. We discover the same associations lingering on in certain metaphors current in Spanish America, but here we arrive at the inner meaning only by a series of transitions. The Spaniards thought truffles were aphrodisiacs, and they considered sweet potatoes, the *batatas* of the Antilles, a superior truffle. The word *batata* never spread much on the American mainland, where sweet potatoes came to be called *camotes*, the name for the vegetable in Nahuatl, the language of the Aztecs. Today in many parts of Spanish-speaking America *camote* is a metaphor used for 'being in love'. It also means a lie or exaggeration, and thus recalls the disillusion of those who relied on the virtue attributed to the sweet potato.¹ Finally, the old error, fossilized, persists to this day in circles where one might least expect it: botanists and mycologists use the word 'tuber' for both potatoes and truffles, thus embalming in their unhappy nomenclature the hoary blunder.

There is a tradition that the vogue of the truffle in France and Italy came from Spain during the Renaissance, and that it attained its exalted place on the tables of the mighty in the reign of Francois I. It certainly soared to new renown in the 16th century, but the survival in France and Italy of the local names derived from the Latin *tuber* is evidence that on humbler and less articulate levels the truffle had not been wholly forgotten in the silent centuries reaching back to Roman times. In Paris, however, the truffle was adorning only the most aristocratic tables down almost to the French Revolution, Brillat-Savarin asserts that the

revival of the truffle is quite recent. . . One can even say that the present generation has almost witnessed it. Toward 1780 truffles were rare in Paris, to be found, and then in small quantities, only at the Hotel des Americains and the Hotel de la Provence. A turkey stuffed with truffles was a luxury to be found only on the tables of the great, or in the homes of kept women . . . At the moment when I write these lines [1825] one can say that the glory of the truffle has reached its apogee.

With the rise of the bourgeoisie following the French Revolution, new layers of society acquired a taste for the delicacy and by their demand for it brought about an immense increase in the harvest. In the 16th century various kinds of truffles had competed for favor in France, but by Brillat-Savarin's time the tuber *melanosporum* of Perigord had established its primacy and become perhaps

I. The metaphorical meanings of *camote* are cited by Hennquez Urefia in his monograph to which we acknowledge our indebtedness in a footnote on page 169, but he does not try to explain those meanings.

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the supreme delight of the haute cuisine. Meanwhile that other tuber, the potato, thanks to the ingenious and bold promotion of the famous Antoine-Augustin Parmentier, had finally, in the 1790's, gained acceptance as a worthy food for a gentleman's table in France.

The reputation of the truffle as an erotic stimulant has an elusive history. This reputation was certainly endemic in Spain, expressing itself as it did in the names *criadilla* and *turma*. The culture of the Iberian peninsula is strong in archaic traits, and this would suggest that the peculiar repute of the truffle goes back far. We have not arrived at the indigenous names for the truffle in the other Indo-European languages, such as those of India. In the Sind, as an example, there is a fungus that in Sindhi is called *saitan jo pelo*, Satan's testicles. But we know not its identity: is it a truffle?

Perhaps the Spaniards in their century of great influence were responsible for spreading the belief that truffles were aphrodisiacs. This is a tempting hypothesis. Yet there is certain subtle evidence suggesting that an indigenous tradition of the same kind prevailed in Central Europe, notably in Germany and Bohemia.

For centuries the hunting of the stag in Europe was the noblest expression of the chase. This stag was the male of the red deer. Norman Douglas in *Paneros* has pointed out that the genitalia of the stag were coveted as precious inciters to venery. Now here is an interesting fact that Douglas did not know: there exists an underground fungus distinct from the truffle that is called in German the *Hirschruffel* - the stag's truffles. In English botanical works already a century ago it was called 'hart's truffle', and also 'hart's balls' and 'deer balls'. The corresponding names in French and Spanish are *truffe du cerf* and *criadilla de ciervo*. We have no evidence that these words circulated outside the covers of books: they could be bookish renderings of the German term. One should look for such terms in the vocabulary peculiar to traffickers in aphrodisiacs and their clientele, and source materials for this dubious area of cultural activity have eluded us. We suspect that our hart's truffles would be found therein. The scientist's name for this genus of fungus is a scientist's neo-Greek rendering of the German name: *elaphomyces*.

As to the ripe age of the German name there can be no doubt. Before 1544 Valerius Cordus, in his *Adnotationes*, commented most curiously on the stag's truffle. Truffles were thought to be earth's testicles and aphrodisiacs, and the stag's testicles were also aphrodisiacs. From this it was only a step to suppose that the underground fungi were generated from the spilled seed of stags! Here is a pretty illustration of the way men's minds work by false analogies, taking figures of speech literally. But this is not all. Why were these underground fungi

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related to the genitalia of stags and no other animals > We believe that beneath the surface of the words of Valerius Cordus we detect a further punning analogy, a foolish confusion caused by homonyms, and yet a confusion possessing a certain extraordinary iridescence.

There are two words spelled 'Venery' in English. One of them is derived from 'Venus' and means sexual lust. The other is derived from the Latin *venari*, meaning 'to hunt'. In sound these two words run parallel to each other throughout the Romance languages and medieval Latin. Indeed, when we go back behind Latin, we discover that both words, Venus and *venari*, descend from the same root, a root cousin to the English verb 'to win'. He who pursues and brings down the game is engaged in the same order of activity as he who brings down a mate. 'Venery' in its application to the chase relates to the noblest kind of hunting, the coursing of the stag. And this leads us to suggest the play on words that probably explains the kinship of truffles to stags. The aphrodisiacal truffles in the earth are earth's testicles, fruit of the stag's truffles, and both are shot through with venery. Venery in both senses loomed large in the consciousness of the 16th century European. We suggest that this common denominator of the homonyms, albeit unexpressed in the text of Valerius Cordus, was in the back of his mind, consciously or unconsciously, as he wrote out his quaint observations about hart's truffles:

Pharmacopole etiam in suis Ofecinis Fungos habent, quos Boletos et Fungos ceruinos vocant. Ferunt eos in sylvis ex semine cervorum enasci, et propterea Venerem stimulare: sed falsum hoc est. Inueni enim hos Ceruinos fungos in prseruptissimis montium syluis, quo ne Damae et Rupicaprae quidem peruenire possent, nedum cerui. Nee verisimile est eos venerem stimulare, cum frigidum, pituitosum, crudum, et malignum succum in humane corpore gignant. Quae enim Venerem accendere debent, contrarias facultates et qualitates habere necesse est.

Apothecaries, in fact, have in their establishments fungi which they call boleti and stag fungi. They say that these originate in the woods from the seed of stags, and hence excite the sexual impulse; but this is false. For I have found these stag fungi in the densest mountain groves, which not even fallow deer and chamois could reach, not to mention stags. Nor is it likely that they excite the sexual urge, as they engender cold, phlegmy, raw, and evil humor in the human body. Things that are to inflame the sexual impulses must have opposite faculties and characteristics.

Cordus, who was German, was writing this passage shortly before 1544, the year of his premature death. His text does not suggest that the lust-inciting virtue attributed to the fungi was a novelty for him, nor foreign in inspiration. He was clearly challenging a tradition native to his German world. But Cordus,



Fig. 11 THE HORNED GOD. Prehistoric painting of a man disguised as animal.
Caverne des Trois Freres, Montesquieu-Avantes, Ariège, France.

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steeped from his earliest years in the New Learning, was far removed from the well-springs of the primitive beliefs of his race. Perhaps he was revealing the innocence that often goes with education when he labored his point about the stags in the mountain groves. Did not the erotic names for the truffles refer rather to the Horned God of the pagan world? In 1920 the Abbe Breuil and Count Begouen published¹ a prehistoric design that they had discovered engraved on the walls in the innermost recess of the Caverne des Trois Freres, at Montesquieu-Avantes, Ariège. It represented a man costumed for a primitive religious rite. On his head he wore antlers. The upper part of his face was owl-like, the lower part covered by a long beard. The skin of a wild beast, perhaps a stag, is swung over his body. His hands are in a clawing posture. A horse's tail protrudes from the rear. He could easily be the remote progenitor of the Robin Goodfellow illustrated on page 83. The ancient artist leaves the beholder in no doubt concerning the importance that he attributes to *las criadillas de ciervo*, the hart's truffles. By this interpretation the aphrodisiacal metaphor suddenly takes on a pulsating vitality, and the two meanings of 'venery' coalesce. The horns of Robin Goodfellow and of the god of the prehistoric cave also appear in a new light. Our ancestors never tired of their jokes about the cuckold's horns - the symbols of his humiliation. R. Lowe Thompson in his *History of the Devil*, published in New York in 1929, suggested that originally these horns were the horns of the 'Satan' who officiated at the rites of the witches' coven. Certainly this interpretation quickens a stale figure of speech, and gives added piquancy to the priapism of Robin Goodfellow.

We might now call a halt to our discussion of fungal aphrodisiacs, were it not for a singular phenomenon that we discover in the Czech language. Alone among the Slavs, the Czechs pay attention, by native tradition, to the world of truffles. For the underground fungi they possess two words, both native. The true truffle is *lanyz*, and the hart's truffle is *thejelenka*. The name of the true truffle comes from *Ian*, the word that designates the roe or hind of the red deer. The name of the hart's truffle comes *faomjelen*, which designates the stag. A peculiar aspect of these words is the shift in genders that takes place:

MASCULINE	FEMININE
<i>jelen</i> (stag)	<i>Ian</i> (hind)
<i>lanyz</i> (true or hind's truffle)	<i>jelenka</i> (hart's truffle)

I. Comptes rendus des Seances de l'Academie des Inscriptions et Belles-Lettres, Institut de France, 1920, pp. 303-310. Our reproduction is from the half-tone there published.

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What lies behind this criss-crossing of genders ? In some medieval Czech text someone may discover the answer, perhaps in a manuscript dealing with love philtres. Meanwhile we suggest as a working hypothesis that the hart's truffle, *jelenka*, was prescribed for women, and the hind's truffle, *lanyz*, for men. In addition to the hart's truffle, *jelenka* is the Czech name for the mushroom known as the phallus impudicus, and a related name, *jelenice*, is used for the hydnum imbricatum, a species that by its shape is also erotically suggestive.

The Czech *jelenka* in its fungal application is semantically and mycologically a precise equivalent of the German *Hirschbrunst*, 'hart's rut', showing that Czechs and Germans shared a faith in the aphrodisiacal virtues of the phallus impudicus (*Hirschbrunst iiber der Erde*) and the hart's truffles (*Hirschbrunst unter der Erde*). J. G. Gleditsch in his *Methodus Fungorum* (1753) wrote condescendingly of the Moravian peasant girls who used certain dried phalloidaceae to cure warts and corns, according to him without success; and how these fungi, air-dried or smoked, were thought to stimulate venery in dogs and horses. He added that rustics used them even on themselves. Mrs. Ulehlova-Tilschova in her book on Czech folk food, *Ceska strava lidovd*, has lately reported an East Moravian name for true truffles, *barant vajca*, 'lamb's fries' or testicles.¹ Later in the same work she calls attention to the important role played by fungi in the ritual dinner on Christmas eve in Bohemia, when the mushrooms are served in a soup or as gravy or mixed with cereal. The precise meaning of the mushrooms consumed on this annual occasion survives in men's memories in southern Bohemia, near Tabor, where the mushrooms are served with millet and the dish is called *kuba* or *manas*. The word *ntanas* means a lusty male, and he who eats of the dish is imbued with extra virility for the coming year.

John Parkinson, obviously relying on Central European sources, published in his *Theatrum Botanicum*² in 1640 certain curious facts about the use of hart's truffles or elaphomyces as aphrodisiacs and in medication:

These be not eaten in the same manner as the former [true truffles], that is for meate or food, but as a medicament being cut into peeces, and dried upon strings put through them to be used upon occasion: while they are fresh they have a strong and evill sent, which they lose in the drying, and are used either alone one dramme and a halfe in pouthier, taken with sweete wine or with other things as provoke venery, as also to increase milke

1. See pp. 54-5 for this and other examples of the rich popular terminology for fungi in Czech; for the references to the mushrooms served on Christmas Eve see pp. 345 ff. In standard Czech *barani vajca* would be *berani vejce*.

2. Parkinson in this work offers us the first reference in English to truffles, which he calls 'Spanish trubbes'. 'Trub' would suggest a Spanish form *truba*, which has never been reported. Parkinson cites a passage in Athenaeus as authority for the aphrodisiacal virtue of truffles, but we have not found it. The ancients probably held such a belief, but we know of not a single reference in ancient writers to fungi as aphrodisiacs, in spite of the phallic symbolism of the μύκης.

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in Nourses breasts, taken in some ptisane drinke, and a little long pepper added thereto: the smoake thereof when it is burned taken underneath, helpeth women troubled with the mother, and openeth the passages when they are close: they are thought also to expell poyson, and the venome of creatures, to be taken in pure wine, and also applyed outwardly.

Both Gleditsch and Parkinson were unfriendly informants repeating hearsay. Mrs. Ulehlova-Tilschova, centuries later, is at last tapping the genuine sources of folk beliefs, of which many in the intervening generations must have vanished forever. In low English the word 'hart' preserves to this day an erotic sense, unrecorded in the dictionaries.

rdere our story of the truffle would end, had not Moliere by a stroke of genius created the character of Tartuffe. By the criterion of price, by the prestige of its *parfum*, by its erotic associations, the truffle holds a position of primacy in the fungal world. To all these distinctions it adds literary immortality: in Tartuffe hypocrisy finds its supreme artistic incarnation. In Tartuffe's fungal name the truffle was woven into the very warp and woof of Europe's cultural tapestry.

What led Moliere to 'Tartuffe' ? This is not a French family name: the nearest approach to it is 'Truffier', which might be rendered 'Truffleman'. At first blush truffles do not suggest hypocrisy. Moliere's choice was brilliant. But why does it ring so true, and how did he arrive at it >

Scholars have applied themselves to this problem, but with meager results.¹ More than a century ago Francois Genin diverted into a fresh channel the flow of speculation on this subject. He announced that Moliere had not invented the name, but had borrowed it ready-made from the Italians. He had discovered a line in the lengthy iyth century poem, *Il Malmantik*, by Lorenzo Lippi, wherein one of the characters is called *il mal tartufo*. These words are to be found in Canto xi, stanza 47. They refer to a dwarf, by name Batistone, whose behavior makes him ridiculous and gets him into trouble. However, whatever his faults, the misshapen little man was no hypocrite and therefore no true precursor of Tartuffe. Moreover, Lippi's work came from the press only in 1676, seven years after *Tartuffe* was first presented on the stage, and we should have to assume that Moliere read it in manuscript, which he could have done but for which there is no evidence. Genin made a virtue of this chronological difficulty, ob-

I. For summaries of the discussions, see *Grand Dictionnaire Universe!* (Larousse) under 'Tartufe'; also the note by Casimir Jarecki, 'Sur l'Origine, la Signification, et l'Orthographe du Nom de Tartufe', in *Archivum Neophilologicum*, I: i, Krakow, 1930, pp. 38-42.

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serving that here was proof of Moher's alertness to everything affecting his art!

Carrying Genin's line of inquiry further, Max J. Wolff in 1916 improved on the citation in Lippi's poem.¹ In a play by Giambattista della Porta, *L'Astrologo*, dating from 1606, *tartufo* occurs in a curious context. One of the characters suffers from amnesia. In Act iv: 7 he is asked whether he is a horse, or an ox, or an ass, and finally, "*Sei tu tartufo?*", to which the unhappy man replies, "*Sto fresco*", which is to say, "I'm in for it now." However, here again no one knows what double meaning this *tartufo* conveyed to the early 17th century audience; but it was certainly unrelated to hypocrisy.

Della Porta superseded Lippi in the quest for Tartuffe's progenitor, and recently Della Porta in his turn has had to give way before a fresh find. Our contemporary scholar Alfred Rebelliau has drawn attention to a pamphlet published in 1609 entitled *Le Mastigophore auquel Tout brisees les brides a veaux de maistre Ivvain Solanicqie*, written by Antoine Fusy, a parish priest of Paris. In it he vituperated against the warden of his church, Nicolas Vivian:

Tu n'es qu'un tartuffe, qu'un butor, qu'une happelourde.

You're nothing but a *tartuffe*, a lout, a paste-jewel.

Butor means a bittern, but metaphorically it means a churl, lout, clodhopper, oaf, dolt. What did this angry priest mean by *tartuffe*? If *butor* was a synonym, he meant what Lippi may have meant by *tartujo* - a dunce, with bad manners to boot. If *happelourde* developed the sense, then pretense and hypocrisy begin to appear. In Moher's 'Tartuffe' there might be an echo of the colloquialism that survives for us in Antoine Fusy's diatribe. But Tartuffe was no dunce, and anyway the question still stands for us: why should hypocrisy have attached itself to the truffle?

We have pursued the thread of scholarly research from Genin to Wolff, and from Wolff to Rebelliau, from Lippi to Della Porta to Fusy, from one dubious clue to another. This evidence is relevant but secondary, and suggests a fallacious analogy with the philologist's quest for the etymon of a word. Surely the problem calls for different handling. We have to do with a creative mind in the act of choosing a name for a great dramatic character.

But before we venture our own comments on the origins of 'Tartuffe' let us return for a moment to Genin. In the course of his discussion of Lippi's *tartufo*, he suggested that the Italian word corresponded to the use of *fungus* as an epithet in ancient Rome. He recalled a character in a play by Plautus who, when he discovered how he had been hoodwinked, exclaimed:

i. See *Archiv für das Studium der neueren Sprachen und Literaturen*, vol. 134, p. 148.

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Adeon' me fuisse fungum est qui illi crederem.

Was I such a fungus as to believe him!

an exclamation that Genin rendered in French: Ai-

je etc assez *cornichon* . . .

Then Genin made a remarkable observation: for the Latin use of *fungus* as an epithet signifying stupidity, said he, the French substitute *cornichon*, *melon*, *citrouille* — names of gourds. Thus it comes about that Genin discovered a common denominator between fungi and gourds in their metaphorical use, and so he furnishes startling circumstantial evidence in support of our thesis, developed on pages 127 ff., of a deepseated association in men's minds between gourds and fungi.

There is another passage in Plautus that leaves no doubt as to the meaning of *fungus* in contexts such as we are discussing. Act v of *Bacchides* opens with it, Nicobulus senex bursting upon the stage with these verses:

Quicumque ubi ubi sunt, qui fuerunt quique futuri sunt posthac
stulti, stolidi, fatui, fungi, bardi, blenni, buccones,
solus ego omnis longe antideo
stultitia et moribus indoctis.

Of all the fools, chumps, dolts, *fungi*, oafs, drivelers, and mouth-
ing idiots, wherever or whenever - single-handed I top the lot
of them in folly and clumsy behavior!

Genin could have cited parallel examples in English - Shakespere's 'toadstool' as an epithet, and Sir William Perm's 'mushroom'. We will go further and make bold to suggest that the perfect translation of *fungus* as Plautus used it is the colloquial 'gump', a humble word that in a wide variety of forms circulates in England, Scotland, Ireland, and America. Its wide use and many forms testify to its long lineage. In Wright's *English Dialect Dictionary* we find gump(h), gomf, gamp, gamf, gaump, gawmp. We find also sumf and sumph. All these connote human stupidity. As we have seen, words etymologically identical to *fungus* are the Slavic *gamba*, German *Schwamm*, and the English 'swamp'; there is another cognate in English - 'sump', a water-filled trap or excavation. Are not 'gump' and 'sumph' etymologically the progeny of the same verbal family? In Plautus' *Bacchides* are *not fungi* simple 'gumps'?

But however fascinating for mycophiles and ethno-mycologists these fungi of Plautus and ancient Rome are, what have they to do with truffles, hypocrisy, and Tartuffe? Was not Genin pursuing the wrong scent - barking up the tree

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where Sterne's Smelfungus grows, rather than grubbing for the habitat of Moher's truffle?

The creative mind in literature is often made manifest in the selection of names for the characters. Dickens is famous for his names. Take Tulkinghorn in *Bleak House*: who has not had the misfortune of meeting his replica in the legal profession? The syllables of that name, savored singly or together, suggest by homonymic echo other words and ideas that become a harmonious composite of the repugnant human being to whom Dickens introduces us. When Tristram Shandy's father sought out the treatises on 'long noses' that would help him in coping with his infant's problem, Sterne characteristically devised names faintly smelling of his salacious theme: Prignitz, Scroderus, Parseus, not to speak of the *Evening Conferences* of Bouchet - names of such subtle craftsmanship that only the attentive reader catches the message, and then only if he is already familiar with Sterne's prurient nose. The art of devising names for fictitious characters lies in choosing sounds that suggest the sense without declaring it baldly, sounds that reach out like antennae to catch meanings and emotional associations which of themselves go far toward evoking the character whose acquaintance the reader is invited to make. Shakespeare's Caliban and Ariel, by an alchemy of phonetic and semantic echoes, offer in their names a foretaste of their roles, and those roles in turn fulfill, richly amplify, and clinch the names, until names and character so thoroughly and unforgettably interpenetrate each other that they are one.

Moliere alone could tell us how he hit on 'Tartuffe', and he failed to do so. This leaves the field open for others to suggest some of the associations that must have lain in his mind, and in particular to explain how the idea of hypocrisy emerged from the truffle.

Truffles live out their lives in the dark, dank, cold underground, a fit habitat for repugnant things. The truffle of France is almost black, like the sombre habit and soul of Tartuffe. He was a lecher, and in the 17th century truffles were the supreme aphrodisiac of France. The big, congested nose that we associate with gluttony and wine-bibbing is today in France *une bonne truffe*: Tartuffe never missed a chance to gorge himself at others' tables. There may even have been a Germanic influence in Tartuffe: the German name for the Devil, *der Teufel*, gave to French the oath *tarteifle*, recorded in Larousse. If this was known in Moliere's time, the phonetic echo would have been felicitous.

Underlying all these, however, was another idea - fraud. In Old French *truffe* and *truffer* meant 'fraud' and 'to defraud'. *Truffa* in Italian and *trufa* in Spanish signify 'swindle' to this day, and the parallel *truhdn*, meaning 'scoundrel', has had a long and vigorous history in the Iberian peninsula. These various forms

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of the same word turned up in Middle English as the verb 'to truffle' and 'to trifle', as when one speaks of trifling with a girl's affections. In Scottish cant 'to truff' has meant 'to befool' since before A.D. 1500, somewhat before the 'Auld Alliance' with France. There is no evidence that Chaucer was conscious of the existence of truffles, but he knew the word in its derived meaning, for in *The Canterbury Tales* his Parson defines the sin of idleness as:

the thurrok [i. e., bilge, or sump, or sink] of alle wikked and vileyns thoghtes,
and of alle jangles, truffles, and of all ordure, [line 715]

wherein jangles, truffles' mean idle chatter and deceits.

All of those words stem back to the Low Latin *truffactor*, a swindler. There is also the Italian *truaare*, the French *troauer*, which give to English the verb 'truck', meaning 'trade'. Equally striking is the Italian *trafficare*, the French *trajiquer*. The unpleasant flavor of these words survives in some contexts in the English 'traffic', but, as befits a nation of shopkeepers, with diminished intensity. 'Traffic' and 'truck' are sometimes synonyms, as when the righteous man declares he will have no traffic (or truck) with yonder early prowling, base informing, sly, litigious, plaguy knave. The origin of *truccare* and *trafficare* has remained obscure. We suggest that they are related to *truffactor*, and that they and *truffactor* itself are all secondary meanings originally derived from the Latin *tuber*, *tufer*, the word for the truffle. The truffle-dealer was a notorious tradesman, and he became a by-word. If we are right, the verbal progeny of the truffle, in the figurative sense, arrived in English in the 13th century, almost four centuries before the Englishman came to know the truffle that was the origin of the word.

The Oxford Dictionary in tracing the history of 'trifle' points out that some philologists have suggested an association with the truffle, but adds that no one has ever proposed a semantic connection. We believe that we can supply such a connection. There is a reason why truffles are associated in some regions with fraud to this day, and why 'truffle' at an early date became a colloquial metaphor signifying fraud. This reason is one that neither philologists nor professional mycologists are best attuned to catch.

When truffles are for sale in the market places of the Mediterranean, *caveat emptor!* The truffle dealer is even now a by-word among his fellows. He mixes dirt with his truffles to add to their weight. He includes truffles in bad condition. He sells inferior species for the best. He adds swarthy fungi that are not truffles. Truffles, in short, are merchandise that lends itself to fraud. They call for unusual experience in the buyer who would avoid deception. In Adolphe Chatin's

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La Truffe, already cited, the author devotes a whole chapter to frauds habitually perpetrated in the retailing of truffles. He reports that in the Dauphine, the Provence, and Perigord, where *triffe* means 'truffle', the ordinary locutions for calling a man a swindler are "Tes un trrier" and "Tes un trurfaire". Every truffle fancier teaches his disciples in the first lesson to be on their guard against these perils of the truffle traffic, lest haply they be (as one might say) trifled with and *truffled*.

This proverbial dishonesty of the truffle merchant has escaped the notice of the philologists who have wrestled with our cluster of words. It supplies the link that the Oxford Dictionary found wanting. It plumbs in depth, back through centuries, the mores of the small-town market-places of Italy, the Provence, and Spain. It supplies the background of double-dealing that appealed to Moliere when he hit on the doublet 'Tartuffe' for the name of his character. To have used 'Truffe' or 'Truffier' would have been crudely blunt and a flaw. The Italian *tartufo* never took to itself the secondary meaning of fraud. By resorting to it Moliere was achieving his purpose - hitting on a name that evoked a penumbra of subtle associations, none obvious but all of them of a kind to conjure up the villainy of his hero; associations that are felt rather than thought out, a *parfum* so elusive that it works its influence and passes undetected. All words are enveloped in such a penumbra, which no lexicographer can pin down, and the essence of great writing is the art of utilizing to the full these emanations, which after all express the most intimate emotions of men in communion with one another.

In 1836 there appeared in Paris a book entitled *De la Truffe*, the authorship of which is attributed on the title page to 'MM. Moynier', about whose identity we have discovered nothing further. Early in that book the reader is told how Moliere came to choose the name 'Tartuffe'. The episode is believable and rings true, but there is no way to verify it. All of the influences and 'sources' that scholars laboriously unravel and dissect and ticket are here synthesized for Moliere in a flash, and the *tuber* of the Romans, the *turma* of the Spaniards, the *trujfe* of the French rises from the crucible of the playwright's mind sublimated and transfigured, imbued as by magic with the immortal attributes of Tartuffe. For Moliere's Tartuffe possesses an eternal vitality, of an order far different from and superior to that other tawdry lure of eternal youth which spurred on Ponce de Leon and his companions, beguiled as they were by childish illusions about *batatas* and miraculous fountains, doomed as they were in this world, like Tantalus in another, to an endless round of recurring hope and recurring frustration.

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Here then is the genesis of 'Tartuffe', as related by MM. Moynier: The authors begin by informing their readers that the story is told to them by the Superior of a congregation of Capuchin friars who in 1826 were still living in Aix-en-Provence. The Father Superior explains that from earliest days the truffle was known to the members of his order, and also its renown as an aphrodisiac. In the course of time, he says, it came about that on a particular occasion Moliere was observing one of the worthy fathers consuming some truffles. Moliere was struck by the rotundity of the friar's face and the vermilion coloring of his cheeks, as he sat there ingesting the truffles at his superior's board. He was swathed and muffled in an enormous woollen habit, and the garment even seemed to envelop a goodly part of the table over which he was hunched. He was a picture of deep meditation. As he savored his truffles, the holy man appeared to be either in a state of ecstatic contemplation before a vision of the Blessed Virgin, or else relishing in deep, long draughts certain intimate internal pleasures artfully contrived. "What do you call this thing ?", said Moliere to him. "A truffle, my dear Sir," replied the contemplative. Then said Moliere to himself: " Of *truffe* I shall make Tartuffe, and thou, poor fellow, shalt be he."

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'GRIB'

For 'toad' the Catalans say *gripau*, and a word of the same root, *grib*, is reserved by Russians to designate the mushrooms that they esteem most highly. What is the common semantic theme here, and do these words point to a comingling of toads with mushrooms in primitive thinking, long ago? Early in our argument we mentioned this strange evidence and promised to return to it.

The words for 'toad' in Europe, as we have seen, are numerous. They are all, we believe, evasive in character, euphemisms resorted to as a refuge from an early word that fell under tabu. That archaic term is unknown to us - unless it be the Gallic *craxantus*, which comes down to us in a single citation. If our findings prove acceptable, there are about ten basic euphemisms for 'toad' in Europe. We discover 'the Poisonous One' in 'natterjack', in the Anglo-Saxon *tosca*, Breton *tousec*; and 'the Burning One' in the Danish *tudse* and Swedish *tossa*. The Irish combine these two when they say 'the Poisonous Burning One' - *losgann nimhe*. There is 'the Moist - or - Slimy One': Welsh *llyffant*, Anglo-Saxon *yce*, Low German *utze*, and High German *Unke*. To these we add a cluster of words for 'toad' from Eastern Europe: the Czech and Polish *ropucha*, Lithuanian *rupUze* and *krupe*, and Slovenian *rapuch*, stemming back to words meaning pus, foul eruption, rash, coarseness.

The Spaniards see in the toad a skin or hide - *escuerzo*; and so did the Cornishmen when they still spoke their own tongue - *croinoc*. The idea of gaseous distension lies behind the Latin *bufo* and the Russian *zhaba*, the Greek *cpuaaXog*; and the 'cow's udder' of the Albanian *thithelope*. We hazard the suggestion that the *padde* of the Low Countries, Scandinavia, and the British Isles is the same word as the 'padding' of a padded garment. The color of the toad finds expression in the Latin *rubeta* and the Greek *cppuvoc*; - unless this latter means 'the Burning One'. The idea of excrement hides behind the German *Krote*, and was responsible, we think, for shaping the French word *crapaud*, and between these two lie the Romansch forms *cratun* and *crapun*. A third Romansch form, *rustg*, is mysterious; it could have lost an initial *k* or *g*, and in that case might have been originally *krustg** which reminds us of the Lithuanian word for toad, *krupe*. Or has it the same origin as the Italian *rospo*, which by its Latin root conveys the idea of scratching > The Spanish *sapo* is, we think, a Greek borrowing, meaning 'snake' in Greek. The idea of swelling and inflation underlie the

I. Cf., e.g., German *Kreide*, chalk, which becomes Romansch *rida*.

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Austrian words, *bratling* and *brotze*, and the Bavarian *broz* and perhaps *braste* also. Finally there is the Old French word, *le hot*, 'the Cripple', with its demonic associations, for which a parallel may be found in the Austrian *bratze*.

There remains to be considered the Catalan *gripau* with its Provençal cousin *grapal*. The French *crapaud* evolved from the latter, and we find an additional derivative in the Romany dialect of central Europe, where the toad is called *grapodo*. Perhaps there are other traces of the same word. The Latin *rana*, frog, would normally evolve in French into *renouille* but the actual word is *grenouille*, and that initial *g* has given rise to considerable learned discussion. Surely it is borrowed from the name of the toad. There is a familiar French saying: 'Fin comme Gribouille qui se jette à l'eau de peur de la pluie', or else 'de peur de se mouiller': 'As clever as Gribouille who jumps into the water for fear of the rain', or 'for fear of getting wet'. Scholars have debated the origin and meaning of Gribouille. Who was this immortal simpleton? We suggest that he was merely a personification of the toad, which jumps into the water when disturbed by rain-drops, and that in Gribouille we discover the unique survival in French of the variant of *crapaud* that is still current in Catalonia, viz., *gripau*.

The root behind *gripau* is *grip-*, and it means what it says: to grip, to seize, to hold, to grab. There is one act in the life of the toad that is marked by a vice-like grip of altogether astonishing strength and duration. This is the act of mating. Everyone who comes upon toads at that moment in their life cycle, in the spring of the year, is held in horrid fascination by the spectacle. Countrymen know the sight from childhood. The smaller male climbs on the back of his mate and embraces her around the armpits. There he clings for days and sometimes for weeks, and cannot be detached from her by any interruption, even permitting himself to be cut up alive rather than let go. Instances have been reported where the forearms of the male have become ankylosed from their prolonged immobility. When the males outnumber the females, then the males clamber over each other on the single mate, and cling to each other and to her, even smothering her to death, and still they cling in a cluster to the corpse as it begins to decompose. These knotted clusters of toads find apt expression in the Provençal *grapal*, related as this word is to the idea of a cluster, as of grapes.¹

There is abundant evidence that the sex habits of toads gripped the imagination of our ancestors. Toads were a symbol of lechery, and so were warts and moles, with which toads were associated. Professor Meyer Schapiro has pointed out that "the conception of the unchaste woman tormented by serpents at her

I. See F. Angel's *La Vie et les Mœurs des Amphibiens*, Paris, 1947, pp. 153-155, for a vivid account of the manifestations of the mating instincts in toads.

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breasts and sometimes toads at her private parts is common in Romanesque and Moslem fantasy".¹ Probably the supreme expression of this association of ideas is in Shakespeare, when Othello, obsessed with jealousy, confronts Desdemona with his monstrous charge, and then in a terrifying passage drains the very dregs of his tormented being, rising to his climax when, at the end, he invokes the image of mating toads in a figure that would be foully obscene in any context but this:²

Had it pleas'd Heaven
To try me with Affliction, had they rain'd
All kind of Sores, and Shames on my bare head:
Steep'd me in povertie to the very lippes,
Given to Captivitie, me, and my utmost hopes,
I should have found in some place of my Soule
A drop of patience. But alas, to make me
The fixed Figure for the time of Scorne,
To point his slow, and moving finger at!
Yet could I beare that too, well, very well:
But there where I have garnerd up my heart,
Where either I must live, or beare no life,
The Fountaine from the which my currant runnes,
Or else dries up: to be discarded thence,
Or keepe it as a Cesterne, for foule Toades
To knot and gender in!

Bosch shows us this lecherous toad in the detail of his *Seven Mortal Sins* that we have reproduced on Plate xm. In Venice there hangs in the ducal palace a singular painting of demonic import, crowded with the creatures of Hell. It is attributed to a painter of unknown identity who is known as the pseudo-Herri met de Bles. In one detail we discover our giant toad squatting on the double bed and staring at its sinful occupants. In the mosaics of the Battistero in Florence, executed early in the 13th century, a supine toad is superimposed on the body of a supine woman, and here the meaning is revoltingly clear.

There emerges, then, a clear picture of the toad as seen through medieval eyes - poisonous, pustulous, lecherous, possessed of a strange capacity to innate itself with air; in its facial expression and in the disposition of its torso and limbs, the very incarnation of a soulless homunculus, crouching and jerking and func-

1. Quoted from his article, 'From Mozarabic to Romanesque in Silos', *The Art Bulletin*, vol. xxi, no. 4, December 1939, p. 328. See also Walter Clyde Curry's *Chaucer and the Medieval Sciences*, Oxford University Press, N. Y., p. 84 ff.

2. *Othello*, rv: 2, 61; on one other occasion Shakespeare refers to mating toads, *Troilus and Cressida* n: 3, 170: "I do hate a proud man, as I hate the ingendring of Toades." See also Waldemar Deonna's paper on 'La Femme et la Grenouille', in *La Gazette des Beaux-Arts*, November 1952.

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tioning like human kind on the animal level of man's dual nature; a horrible caricature in miniature of sensual man and miserable sinner.

We suggest that the Catalan and Provençal words for 'toad' were originally keyed to the mating act. In the fungal world there are many erotic and phallic associations, as we have seen. It would have been a happy solution to our problem of *grib* and *gripau* if we could have discovered in the Russian word *grib* the erotic associations that would have linked it with our interpretation of *grip au*, but they do not exist.

The story of *grib* in the Slavic world is the same that we know well from the West. At one time the word designated a particular class of mushrooms. By its pre-eminence this class came to stand for the whole mushroom world, and its name became generic, usurping the semantic terrain originally occupied by the Indo-European words, *gomba* and the hypothetical *bu-dla*, which we discussed on pages 93-94. A glimpse into this curious history is offered to us by the *Book of Rules* of the Josif Volokolamskij Monastery for the 16th and 17th centuries,¹ wherein we learn from the refectory diary that the monks were served mushrooms regularly on Wednesdays and Fridays, the fast days. The amanuensis records sliced mushrooms, boiled sliced mushrooms, chopped mushrooms, mushrooms with sauce, and mushrooms with garlic. For 'mushrooms' he uses only two words: *griby* and *gruzdi*, and it is clear that all kinds belonged to one or the other. Apparently all boleti were *griby* and all gilled mushrooms were *gruzdi*. *Gmzd'* still carries traces of this old meaning: it floats uncertainly in its specific application among various lactarii and russulas, though it belongs specifically to the lactarius piperatus.

Grib circulates chiefly among the mycophilic northern Slavs and the Slovenians. We think it is unknown in Serbian and Bulgarian, but it appears in Polish as *grzyb*, in Czech as *hrib*, in Ukrainian as *hryb*, and in Slovenian as *grib*. The idea inherent in the root is familiar to us: grubbing, rooting, scraping, digging, grabbing, gripping.² It evokes the activity of the mushroom gatherer in the forest. Down into Renaissance times the Germans used **Griibling** as a

1. See *Chtenija v Obščest've Istorii i Drevnostej pri Moskovskom Universitete*, 1880, bk. 3, p. 113.

2. Max Vasmer in his new Russian etymological dictionary suggests a novel root *grib*, linking it with certain words signifying 'slime'. While slime, as we have shown, is semantically appropriate for a fungal word, the etymology that we espouse is semantically felicitous, and we are fortified in our position by the comments of Roman Jakobson, which he allows us to quote:

"As to ⁿfc, I have not the slightest doubt about its origin. The Slavic languages clearly attest all vocalic grades of the root *greb*: - (1) *greb-*, (2) the corresponding prolonged grade *greb-*; (2) *grab-*, (20) the corresponding prolonged grade *grab-*; (3) *gr'b-*, (30) the corresponding prolonged grade *grib-*. Thus: (1) Russ. *grebti*, *gresti*, Old Church Slavonic *greti*, to dig up, dig in, rake, spade, shovel, scratch, scrape, row; Bulgarian *greblo*, rake, oar; Russ. *grebdt'*, to disdain, *grebtd*, sorrow, *greben'*, comb; (1a) O Ch Sl, *pogrebditi* to bury. (2) Russ. *grab*, grave; (20) Russ. *grdbit'*, to snatch, grab, *iob;grdbli*, rake. (3) Czech *hřbiti*, to lie buried; *hrbelec*, curry-comb; (30) Serbo-



PLATE xxxin. Toads in Hell. Detail from a painting by the pseudo-Herri met de Bles.
Venice, Ducal Palace.



PLATE xxxiv. Toad. Detail from a mosaic. *Florence, Battistero.*

'GRIPAU' AND 'GRIB'

name for some kind of underground mushroom, perhaps a truffle, and of course its etymology is identical. Was it accident that led to the use of the same root in the East for 'mushroom' and in Catalonia for 'toad'; Did not this usage emerge from the common pool of ideas that we have traced at length, a unified field of associations, albeit discordant associations inasmuch as the Slavs loved their mushrooms whereas all peoples rejected the toad?

Croatian *griblja*, furrow, *gribati*, to furrow; Russ. *grib*, mushroom. Similar vowel alternations are present in other Slavic roots."

When Professor Jakobson worked out the foregoing etymology, neither he nor we had discovered the obsolete German word *Griibling*, for which German philologists give the same origin as he for *grib*. German mushroom manuals give *Grubenorchel* as the common name of the *helvella lacunosa*; if this name is in actual circulation, it is a survival in Germanic of the *grib* root.

A

In Europe the *amanita muscaria* is one of the most widely known of the wild mushrooms. It is the archetype for the 'toadstool' tribe in mycophobic countries, being the first gilled mushroom that the mycophobe learns to recognize, that he may the better curse it. In mycophagic lands all country folk know it, and have devised for it a diverse popular nomenclature. The esteem in which the various edible species are held differs in different parts of Europe, but the obloquy meted out to the fly *amanita* is uniform and heavy. Its evil reputation far outruns its deserts. There is a general belief that the victim who eats it dies; yet we believe that this murderous accusation is unsupported by a single trustworthy case history. How strange it is that the fly *amanita* should be far better known than its truly lethal cousins, which in some parts of Europe, such as Great Russia, possess no common name!

A mushroom that is merely lethal is less interesting than one possessed of the devil. Here lies, we believe, the explanation for the singular reputation of the *amanita muscaria*. This mushroom inebriates, it does not kill, and in all primitive societies inebriation, like delirium and even insanity, is held in awe as a manifestation of divine powers. The problem of the *amanita muscaria* is one of the most elusive that ethno-mycology has to offer, and one of the most fascinating. Can we show that its intoxicating virtue was known to our remote ancestors and that they made use of it? Did it play the role of an important hallucinogen in the early social history of Europe? For almost two centuries the slow debate has gone on, and the issue is still moot. Perhaps it is possible to adduce fresh evidence, but first we shall sum up the discussion to date.

In the early 18th century, the Swedish traveler Philip Johan von Strahlenberg journeyed extensively in Russia, Tartary, and Siberia. His admirable report, written in German, appeared first in Stockholm in 1730, and an English translation came out in London in 1736, bearing the lengthy title: *An Historical and Geographical Description of the North and Eastern Parts of Europe and Asia particularly of Russia, Siberia, and Tartary*. Von Strahlenberg was a thorough and conscientious observer. From his pages the western world learned for the first time of the Korjak tribesmen of Kamchatka, and how they consumed the fly *amanita* for its intoxicating effect. This nugget of curious anthropological information drew wide attention throughout the literate world, and the interest then aroused has continued up to now. Indeed, a bibliography dealing with this Korjak practice would be surprisingly long. Today we know that traces of

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it survive also among the neighboring communities of Kamchadals, and also among the Chukchees, the primitive people living in sparse and tiny villages at the easternmost tip of Siberia, across the Bering Strait from Alaska.

Indeed, we know more. Far to the west of the Korjaks and Chukchees, in western Siberia, in the northern lands lying between the Ob and Yenisei rivers, we have fragmentary but reliable reports that the shamanistic use of the inebriating fly amanita has survived into our own times. Kai Donner, the Finnish scholar, states that the Samoyeds in this region eat the mushroom, and also the people known as the Yenisei-Ostjaks.¹ The Samoyeds are not of the Finno-Ugrian culture, but the Samoyeds and Finno-Ugrians together make up the family of peoples known as Uralic. The Yenisei-Ostjaks, though neighbors, are of different cultural lineage, being one of those now scattered tribes, inhabiting the most inhospitable and remote corners of Siberia, grouped together for convenience by anthropologists as 'Hyperborean' or 'Paleo-Siberian'. Donner reports that the shamans of the Yenisei-Ostjaks, to achieve the desired psychic effect, eat seven mushrooms, for which their name is *hanggo*, a word clearly related to the Latin *fungus* like the other variants mentioned on pages ijSff. Well to the east of the Yenisei-Ostjaks, east of the Lena River, but to the west of the Chukchees and Korjaks, there is another Paleo-Siberian people, the Yukaghirs. According to Jochelson in his study of this people, made two generations ago, they no longer used the fly amanita in his time but they preserved a tradition of its use in earlier days. Jochelson unfortunately failed to note the Yukaghir name for it, nor did he record the details of the tradition.

More than two centuries have passed since von Strahlenberg published his book, and for the role of the fly amanita as an inebriant in Siberia we still must rely on stray data that anthropologists have happened to catch. A desideratum for Russian and Finnish workers should be an intensive ethno-mycological survey of all the peoples of Siberia, to discover every trace of the inebriating mushroom. In folklore, in linguistics, and in the details of contemporary usage, there must be much evidence concerning it that we now ignore. If we assume, as some anthropologists have done, that the Paleo-Siberian peoples (Korjaks, Kamchadals, Chukchees, Yukaghirs, Yenisei-Ostjaks, etc.) once roamed over most of northern Siberia, and that they were then sent scattering to their present

I. See Donner's *Bei den Samojeden in Sibirien*, Stuttgart, 1926, p. no; also his 'Ethnological Notes about the Yenisey Ostjak (in the Turukhansk region)', published in the *Memoires de la Societe Finno-ougrienne*, vol. LXVI, Helsinki, 1933, pp. 81-82. The former study has been translated and published (New Haven, 1954) with the title *Among the Samoyed in Siberia*, in the series of Behavior Science Translations, Human Relations Area Files. With that disregard for precision in matters mushroomic which afflicts most Anglo-Saxon work, the translator rendered *Fliegenschwamme* by 'toadstools'.

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peripheral habitats by irrupting Mongol and Turkic invaders from the south, then the use among them of a common Indo-European word for the fly amanita would certainly date back to the time before they were blown to the four corners. The specific application to the fly amanita by certain of these vestigial peoples of a word that in Indo-European is generic for all mushrooms poses an exciting question: did these Siberian tribesmen borrow the use of the inebriating mushroom, and with it the name, from the Indo-Europeans >

Before the 18th century was out, in 1784, von Strahlenberg's compatriot, the scientist Samuel Odman, advanced the thesis that 'going berserk' in early Norse times had been a state of excitement produced by the fly amanita.¹ The Odman suggestion was taken up and elaborated more than a century later, in 1886, by the Norwegian botanist Fredrik Christian Schiibeler in his *Viridarium Norvegicum I*. The Odman-Schiibeler theory took popular hold in parts of Scandinavia and even gained acceptance there among writers of scientific and popular handbooks, school textbooks, and encyclopaedias. Indeed, many educated Swedes and Norwegians seem to take the theory as accepted fact.

In 1929, a specialist in the medical history of Norway, Dr. Fredrik Gron, undertook to challenge Odman and Schiibeler.² He dismissed the fly-amanita explanation for 'berserk-raging' as weakly founded and improbable, pointing out that nowhere in sagas or other early Nordic source is there a reference to the fly amanita. In this he has been recently sustained by Professor Magnus Olsen, the outstanding authority today on Norse literature and traditions. Furthermore, the ancient writings of the Mediterranean basin make no allusion to fungal hallucinogens nor is there a single mention of inebriating mushrooms in the voluminous source materials available to us concerning the witchcraft cult. Odman and Schiibeler had relied solely on the analogy of modern practices observed among the Siberian tribes.

But their side of the argument has not lacked champions. On November 1, 1918, the famous Swedish meteorologist H. Hildebrandsson read a paper before the Royal Scientific Society in Upsala in which he recounted an extraordinary episode. It seems that in the war between Sweden and Norway in 1814, some soldiers of the Swedish Varmland regiment were observed by their officer to be seized by a raging madness, foaming at the mouth. On inquiry, it was learned

1. His paper was entitled 'Forsok at utur Naturens Historia forklara de nordiska gamla Kampars Berserkgarig' ('An attempt to explain the berserk-raging of ancient Nordic warriors through natural history'), published by the Kungliga Vetenskaps Akademien, *Nya Handlingar*, vol. 5, pp. 240 et seq. For all of our references to the Scandinavian pronouncements on the fly amanita we are indebted to Professors Georg Morgenstierne and Rolf Nordhagen.

2. In a paper entitled 'Berserk-gangens vesen og arsaksforhold' ('The nature and causes of berserk-raging'), *Thronhjems Videnskapselskaps skrifter*, No. 4.

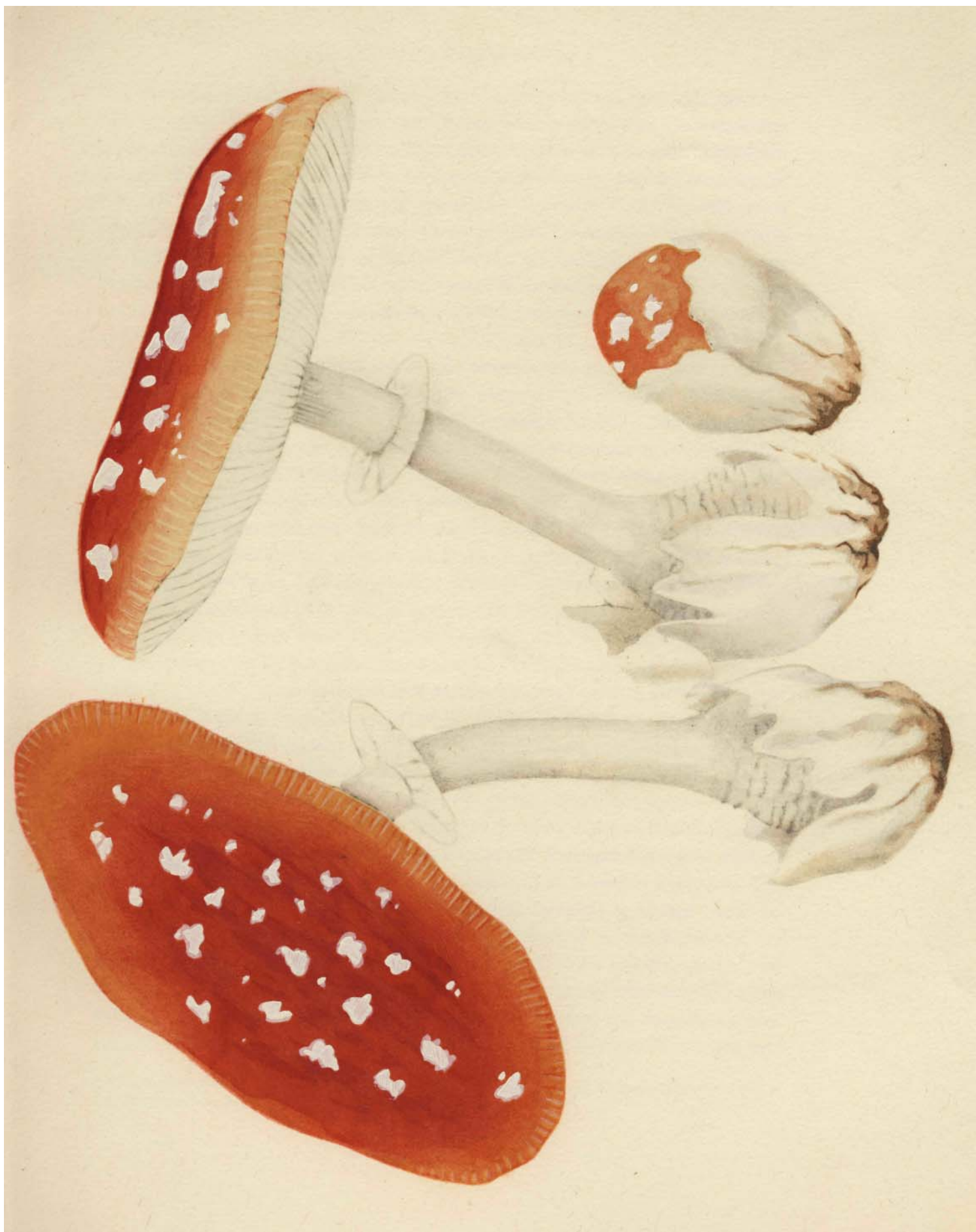
PLATE XXXV

Jean-Henri Fabre. *Amanita muscaria* Fr. ex Pers.

French: *tue-mouche*, *crapaudin*, *fausse orange*;

Germ an: *Fliegensch wamm*\

Russian: *mukhomor*.



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that the soldiers had eaten of the fly amanita, to whip up their courage to a fighting pitch. We have not seen the Hildebrandsson paper, nor discovered the evidence contemporary with the alleged episode on which he relied, but both he and the society before which he appeared enjoy the highest standing in scientific circles, and his paper was quoted by Professor Carl Th. Morner, a distinguished Swedish physiologist, whose avocation was the study of botany and the higher fungi, in two of his publications on mushrooms.¹ The Odman-Schiibeler thesis received further endorsement from Professor Rolf Nordhagen, the Norwegian botanist, in an article in the Norwegian newspaper *Aftenposten* of January n, 1930.

There is a tradition in Russia that the fly amanita was once used in folk medicine. N. Annenkov refers to this former usage as a fact in his *Botanicheskii Slovar'*, published in St. Petersburg in 1878. Rudolph Krebel in his *Volksmedizin und Volksmittel verschiedener Volkerstamme Russlands*, published in 1858, said that it had been used to treat lameness, but he is not precise in citing his authority nor in identifying the practice with a particular place or period. In some kinds of arthritis the exertions stimulated by the fly amanita might indeed be helpful. Perhaps there exist earlier treatises on Slavic folk medicine that will amplify these insufficient hints. In Professor C. Hartwich's great work, *Die menschlichen Genussmittel*, published in Leipzig in 1911, we find on page 256 a sentence which, translated, says: "In a letter from a native of Zurich in 1799, in which year a Russian army under Korsakov was stationed there, the amazing statement was made that the Russians gathered and ate fly amanitas on the Ziirichberg. Of course, the Russians must have learned to do this in their own country." The pharmacologist Emil Eidenbenz of Zurich has gone to considerable pains for us in looking for the letter on which Professor Hartwich relied, but with no success. Thus a promising hint, on inquiry, yields meager results.

Our European ancestors had opportunities to witness the inebriation caused by the fly amanita, it only when accidents occurred. There are numerous medical case histories of such episodes. One of the best is to be found in a paper by Dr. M. Roch, a physician attached to the Cantonal Hospital in Geneva, entitled 'Les Empoisonnements par les champignons', published in the *Bulletin* of the Societe Botanique de Geneve, 2nd series, 1913, where he reports on the wild delirium of four Italian laborers in the Canton of Neuchatel after they had eaten a mess of fly amanitas. The delirium was followed by sleep, and sleep by a return to normal sobriety. Such episodes must have occurred from earliest times, and

I. 'Nagra erfarenhetsron om de hogre svamparna. Kritisk ofversikt,' in *Upsala Lakareforenings Forhandlingar*, Bd. xxrv, Heft 1-2, 1918; also, the same author's *Om de hogre svamparna*, 1919.

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must have aroused the awe that the astonishing symptoms would naturally inspire among people whose lives were shaped by beliefs in supernatural forces. But in the early treatises on mushrooms, before von Strahlenberg's journey into Siberia, we find no intoxicating properties attributed to the *amanita muscaria*.

It seems clear that cooking attenuates or kills the distinctive virtue of the fly *amanita*. In Italy and France it is not rare to find individuals who habitually eat this mushroom with impunity. Our friend Camille Fauvel, the mightiest mycophage of us all, informs us that he has sat down to a mess of fly *amanitas* scores of times. He gathers the mushrooms, peels the caps, discards the stems, and cooks the peeled caps in any of the usual ways. Holger Lundbergh of New York reports to us that his mother in Sweden was taught by the famous painter Anna Boberg, nee Scholander, to add a snippet of the cap of a fly *amanita* in preparing all mushroom dishes, in order to point up the flavor. Whence came this astonishing culinary secret, uncovered thus in the heart of mycophobic Sweden? Mrs. Boberg can hardly have hit on it herself. Did she pick it up elsewhere in Europe? Or was it indigenous to Sweden, the final emanation of some ancient esoteric lore, possibly distorted beyond recognition from its original purpose and aspect?

For the best accounts of the symptoms of fly-*amanita* inebriation, we turn to the observations of Waldemar Bogoras and Waldemar Jochelson during their visits to Kamchatka a generation ago. (Their studies were published by the American Museum of Natural History as parts of the memoirs of the Jesup North Pacific Expedition.) On eating the mushrooms a period of exaltation ensues, in which the chewers of the raw mushrooms shout and rage. Then they engage in feats of prodigious physical exertion and experience illusions of radical changes in all dimensions, of miraculous mobility, of metamorphosis. The folklore of northern Europe is filled with supernatural phenomena that remind us of these symptoms, as for example the powers of mobility attributed to witches and werewolves. But are mushrooms ever mentioned in those tales?

Of themselves, these analogies from folklore carry no weight, and indeed we must be cautious about false clues. Take for example the strange case of Alice in Wonderland. Shortly after her adventures begin, this enchanting child nibbles at a mushroom, and it produces in her the typical sense of changed dimensions that we recall in the horrifying accounts of the *amanita*-eating Korjaks. All of Alice's subsequent distortions, softened by the loving irony of Lewis Carroll's imagination, retain the flavor of mushroomic hallucinations. Is there not something uncanny about the injection of this mushroom into Alice's story? What led the quiet Oxford don to hit on a device so felicitous, but at the

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same time sinister for the initiated readers, when he launched his maiden on her way > Did he dredge up this curious specimen of wondrous and even fearsome lore from some deep well of half-conscious folk-knowledge ? On first reflection that mushroom in *Alice*, so innocent for the uninformed, seems like a gentle aftermath, a distant reminder, of awful rumblings from barbaric times now forgotten; like the long, harmless swell that rocks the sea many days after the havoc of the hurricane. The temptation is strong to espouse this romantic hypothesis, and for the purposes of the controversy among Scandinavian scholars, this would tilt the balance, and the ayes would have it.

But we think that Alice's mushroom grew in Kamchatka, not in the forests of primeval Europe. It was on July 4, 1862, while rowing gently up the Isis to Godstow, that Lewis Carroll embarked on Alice's adventures, holding three little maidens spellbound by the tale. Over the following months he put the story into final form, and presented the completed manuscript to Alice for Christmas in the same year. Now it so happens that the earliest popular manual on mushrooms in the English language made its appearance in that same year, M. C. Cooke's *A Plain and Easy Account of British Fungi*. We do not know exactly when it came on the market, but we know that it was the subject of a lengthy review in the October 4 issue of *The Gardeners Chronicle and Agricultural Gazette*. (The reviewer commended Cooke's efforts, and then conceded the hopeless mycophobia of the English: "... notwithstanding all that is said in favour of mushrooms, we suspect it will take a long time to remove the deep rooted prejudice that exists against them in this country, and teach our rustic population those that are harmless.") Cooke's little volume describing strange fungal growths was of a kind to attract Alice's creator. On pages 20-21 Cooke discusses the use to which the fly amanita is put by the Korjaks, and its effects on the eater: "The natural inclinations of the individual become stimulated. The dancer executes a *pas d'extravagance*, the musician indulges in a song, the chatterer divulges all his secrets, the orator delivers himself of a philippic, and the mimic indulges in caricature. *Erroneous impressions of size and distance are common occurrences*, a straw lying in the road becomes a formidable object, to overcome which a leap is taken sufficient to clear a barrel of ale or the prostrate trunk of a British oak." (The italics are ours; the reader will note the Gilbertian flavor of the oak that had to be 'British'.) In Lewis Carroll's diaries we learn that he began putting Alice's adventures on paper on November 13, well after Cooke's volume was on the market. For more than four months his tale had been taking shape in his mind, a period when he must have been ripe for such suggestions as Cooke had to offer.

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With a shout of discovery we leap to the conclusion that Alice's mushroom is the one that Cooke serves us. The timing is perfect. Surely the progenitor of Alice, in the cloistered retreat of Christ Church, with Cooke's manual at hand, transmuted the untamed practices of the uncivilized Korjaks into the poetry of wonderland.¹ But no sooner do we reach this presumption than doubt re-enters, raising an admonitory finger. Can we be sure there was no native memory of a miracle-working mushroom ? We turn to the English translation of Jacob Grimm's *Teutonic Mythology*, and there in volume 4, on page 1412, we find the following statement, based on an Irish fairy-tale that we have not succeeded in locating: "The Elf-King sits under a great toadstool, and whoever carries a toadstool about him grows small and light as an elf." Certainly Lewis Carroll never read this reference in Grimm, but Grimm's wonder-working fungus of Irish lineage long antedated Cooke and von Strahlenberg, and Alice on her journey may have encountered this native mushroom. Once again our inquiries leave us poised between yes and no.

If on balance we incline to the view that Cooke inspired the mushroom episode in *Alice*, this is because Cooke's influence is clearly felt in Charles Kingsley's famous novel, *Hereward, the Last of the English*, published in 1866. In Chapter 10 Kingsley introduces to his readers an old Lappish nurse, living in England, who possessed the secret of the "scarlet toadstools". She adds their juice to the men's ale, and makes them laugh and roar, "merry-mad everyone of them", and thus she extracts from them their secrets. Kingsley in the story expressly denies that the English of pre-Conquest times knew the virtues of the "strange fungus, with which Lapps and Samoiedes have, it is said, practised wonders for centuries past". In any case, the historical novelist is not an historical source. He too had read his Cooke, or some other of the earlier writers about the Korjaks, and to adorn his plot he fathered on the Lapps the practices of the Siberian tribes remote from them and remoter still from England. But today we know that he was right about the Samoyeds. Will some persistent inquirer someday discover that the Lapps knew the secret too ?

In the annals of Europe's cultural history it is hard to find a parallel for the polemic over the fly amanita's role in the Viking world. Odman published the initial paper in 1784, and at a glacial pace the controversy has simmered since then in Scandinavia and nowhere else. In English and German mycological

I. We cannot prove that M. C. Cooke's book was in C. L. Dodgson's possession. We learn from W. G. Hiscock, assistant librarian of Christ Church, Oxford, that Dodgson's library was dispersed after his death, and in the auction sale many books were put up in lots with only one or two titles itemized in the catalogue.

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writings one sometimes happens on allusions to it, but only allusions. Yet for the ethno-mycologist and the student of northern Europe's early culture the problem will not stay laid, so long as the meager and tantalizing evidence hangs balanced as it does today.

We believe a new approach to the enigma of the fly amanita is to be found in the history of word meanings. We intend to propose a novel reason for the link that binds the famous mushroom with the fly. This is a bold undertaking, for the traditional explanation, the official and orthodox explanation, has seemed to everyone for centuries to be full, perfect, and sufficient. Indeed, the argument in favour of orthodoxy in this instance is so strong that if we should succeed in our challenge, our triumph in this our secluded garden of intellectual disputation would be high drama, even if only in a minor key: caviar for initiates.

Everyone who knows the first thing about wild mushrooms knows why the fly amanita is so called: it kills the flies that feed on it and until modern times it was used as a household insecticide on the Continent. This is what all the books say. What is more, there is a large part of Europe where the untutored rustics, the people who read no books, also accept the story as part of their legacy of folk knowledge. It belongs to that curious fund of 'facts' that people keep repeating to each other and believing, without verification or analysis, like the saying that all Russians are good linguists. The area of Europe where our folk belief prevails is extensive but not all-inclusive. It embraces the Slavic world, the Germanic world except the British Isles, the Vosges, where Franco-German bilingualism prevails, and one or two enclaves elsewhere in France. The ancient authors, though they have much to say about the fungi, never refer to a fly-killer, and in modern Italy among the country folk we believe the association with the fly is unknown, but our inquiry has not been exhaustive. It is unknown among the Basques, and apparently to all the rural population of the Iberian peninsula. If we judge by Eugene Rolland's evidence in his *Flore Populaire*, in France the name *tue-mouche*, 'kill-fly', is indigenous only in Alsace and the Aude, though thanks to the mushroom manuals, it is now familiar to a sprinkling of educated Frenchmen elsewhere. (Rolland reports that at Val-d'Ajol in the Vosges the natives hang the fly amanita from the ceiling, where, he says, it draws flies to their death.) By contrast the German *Fliegenschwamm* or 'fly-fungus' has its variants in all the German dialects, and also in Dutch and the Germanic languages of Scandinavia, but not in English. (The 'fly agaric' and 'fly amanita' of England are learned inventions of the past two centuries.) The Russians say *mukhomor* or 'fly-killer', and parallel terms are found on the tongues of other peoples of the Slavic family.

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In short, the fly amanita is linked with the fly almost solely among the Germanic and Slavic peoples of northern Europe. We can trace it back six centuries, and in a series of quotations we are going to document this folk belief from the Middle Ages down to the Age of Science. We shall prove that its credentials have been seasoned with time. We shall suggest that what has long been believed may be only part of the truth, or even wholly false.

The earliest reference to the fly amanita known to us is in *De Vegetabilibus*, the considerable work on the vegetable kingdom written in the 13th century by Albertus Magnus. Twice he speaks of it and on each occasion refers to its fly-killing powers:

[1]

Tuber enim, quod vocatur muscarum, venenosum est; et si lacti immisceatur, et muscas cadant super lac illud, gustantes ipsum, inflantur et moriuntur. Est autem illud tuber in superficie latum, et ad rubedinem declinans, habens in superficie ampullas, sicut sunt ampullae in pelle valde leprosi hominis, in quibus non est humor, sed ventositas quaedam interclusa. -*De Vegetabilibus*, BOOK n, Chap. 6: 87.

For the mushroom that is called flies' [mushroom] is poisonous; and if it be mixed with milk, and flies fall upon that milk, upon tasting it they swell up and die. Moreover, that mushroom is broad, and tends to redness, having on the surface vesicles, such as are the vesicles on the skin of a very leprous man, in which not moisture, but a certain windiness is enclosed.

[2]

In nostris autem habitationibus invenitur fungus, qui latus est et spissus, aliquid ruboris habens in superficie, et in illo rubore habet multas ampullas elevatas, quarum quaedam fractae sunt, quaedam non: et ille mortalis est, et statim interficiens, et vocatur fungus muscarum, eo quod in lacte pulverizatus interficit muscas. *Idem*, BOOK vi, Chap. 7: 345.

Among our dwellings, moreover, there is found a fungus that is wide and thick, having a little ruddiness on its surface; and in that ruddiness it has many raised vesicles, of which some are broken, some not; and that [fungus] is death-dealing, and kills immediately, and is called flies' fungus for this reason, that when pulverized in milk it kills flies.

The quotations are taken from pages 136 and 517 of the text edited by Carl Jessen and published in Berlin in 1867.

A century later, in the years 1349-50, another German, Konrad von Megenberg, wrote *Das Buck der Natur*, the earliest work on natural science in the German language. He devotes a paragraph to various fungi, and ends up with some quaint sentences about the amanita muscaria. Writing in the Bavaro-Austrian dialect, he said:

Es ist auch einer anderley schwammen die seind zuomal unreyn die seind breit und

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dick und oben rot mit weysen bleyterlen. Wann man die zuo milch mischt so deet er die muggen. Darumb heyssen es muggenschwammen. Und zuo latein mustineti[?].

There is also another kind of fungi which is wholly unclean; they are broad and on top red with white little plaques. When one mixes them with milk, they kill flies. Therefore are they called *muggenschwammen* [i.e., 'fly-fungi'] and in Latin *mustineti*[?].

We have taken our text from the earliest printed edition, dated 1475.

Our third author is likewise German, Valerius Cordus, known sometimes as the father of modern pharmacology, whose untimely death at the age of 29 in the year 1544 was considered by his Renaissance contemporaries, the scholars of the New Learning, as the crudest of blows and an irreparable loss. In his *Adnotationes* or commentaries on Dioscorides he too devotes one paragraph to mushrooms, and one sentence to the fly amanita. In his text we find the earliest use known to us of the modern German name *Fliegenschwamm*:

Sub Betulis arboribus in candido & rufo colore varii nascuntur Fungi, quos *Fliegen-schivemme*, id est, Muscarios fungos vocamus, quoniam muscas lacte intriti occidunt.

Under birch trees, white and red in color, spring up various fungi that we call *Fliegenschwamme*, that is, 'fly-fungi', since when crumpled in milk they kill flies.

The father of the science of mycology is the designation that has often been bestowed on Charles de Lecluse, a Frenchman of Arras, whose contributions to botany make him a major figure in the history of that branch of knowledge. The year 1601 saw the publication in Antwerp of his *Rariomm Plantarum Historia*, an important work in which a sizeable section was devoted to the fungi of Hungary, or 'Pannonia' as the region was called. Carolus Clusius, the name by which De Lecluse is better known, was the first writer on mushrooms who fixed on them his gaze, describing them with the fidelity of a man who sees and puts down on paper what he sees. His description of the amanita muscaria is exact, and then he refers to the flies:

Invenitur etiam hsec species in caeduis silvis Francofurto ad Mcenum vicinis, unde rustics mulieres lectam, in urbem deferunt venalem, cum non ignorent plerosque empturos ad muscas necandas: nam cum, ut dixi, muscse libenter illi insideant, divulsam in fragmenta, varijs in conclavi locis ante fenestras spargere solent, ad quae invitatae & excitae muscas, succum sugunt ipsis perniciosum, & paulo post etiam lethalem.

This species is also found in the aged forests around Frankfort-on-the-Main, where it is collected by peasant women and brought to the city for sale. Since most of the buyers know it well, they buy it to kill flies with. And so, as I said before, since the flies like to sit [on these mushrooms] people scatter them in pieces around the room and strew them before the windows; the flies, attracted and excited, suck the juice which is poisonous for them and soon die.

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Albertus Magnus, von Megenberg, Valerius Cordus, Carolus Clusius - here is a formidable foursome supporting with their testimony the traditional view of the fly amanita. A critic, however, might find occasion for certain reservations. All four were Germans or writing against a background of German experience.¹ Why did not the Greek, Latin, French, and Italian writers report the same phenomenon > The credibility of Albertus Magnus is somewhat impugned by his description of the mushroom: the amanita muscaria has no windy pustules suggestive of lepers. The Doctor Universalis must never have focused his eyes on the fungus he was describing: at least part of what he said was hearsay. Von Megenberg exposes himself to the same criticism. Just before the sentences about the fly amanita, he has described another species, the *Pfifferling*, which in his day meant the lactarius piperatus, and he erroneously declares that it is a mortal poison. Here, translated, are his words: " One must watch out, for they are often most poisonous and can sometimes make a man deathly ill... We have an instance of this in Austria: a man ate a dish of *Pfifferling* and then drank strong mead, and he died at once in front of the barrel. This is true, by God!" As witnesses, both Albertus Magnus and von Megenberg would be in trouble on cross-examination by opposing counsel: their writings are a blend of the learning and the hearsay of their time. Valerius Cordus' brief statement adds nothing beyond his own adherence to a popular belief. Clusius introduces a new note: he is the first to inform us that the use of the fly amanita as an insecticide was exceptional: he places the custom around Frankfort, and by implication tells us that it was not known elsewhere. He was a traveled man, and he lived in Frankfort from 1587 to 1593.

There is a peculiar thing about Clusius' remarks on the fly fungi. He does not consider these mushrooms a species. He describes them under the heading of Genus XII of pernicious mushrooms, and this genus he sub-divides into five or six species, all of which he says kill flies. With the aid of Clusius' watercolors preserved in Leiden, the Hungarian scholar Dr. Gy. Istvanffi de Cziki-Madefalva has identified these species, two of them being russulas, one of them certainly a cortinarius, and two of them amanitas.² When Clusius reports the use of a fly fungus by the housewives of Frankfort, he is referring to the amanita muscaria. As Clusius was a reliable reporter, we must keep in mind that in

1. The largest and most popular old Polish herbal, written by a Cracow Professor of medicine named Syrenius (f 1611) and published in 1613 in Cracow, says under *muchomor* on p. 1394: "One boils fly amanitas in sweet milk; then one pours it into bowls. Flies fly down to the milk and perish." We have not seen this work. The reader will observe that Syrenius boils his concoction, which would certainly not help its insecticidal powers.

2. See this author's *Etudes et Commentaries sur le Code de l'Eduse Augmentes de Quelques Notices Biographiques*, Budapest, 1900.

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former times, when the tradition of fly-killing fungi was still strong in folklore, not one but several species probably bore this designation.

This leads us to Linnaeus. The great Swedish scientist in his *Flora Svecica* repeated the statement about killing flies, but instead of placing the custom in Frankfort, he said it prevailed in Smolandia, a Swedish province where he had spent his childhood:

Cum lacte occidit Muscas in Smolandia.

This is not the only reference to the insecticidal amanita in Linnaeus. In his famous *Skanske Resa* ('Journey through Scania'), published in 1751, on page 430, he tells how a certain Swede in Upsala got rid of bedbugs from two of his rooms by the use of the amanita muscaria. He describes the remedy and then concludes with what we consider a most significant statement:

One takes in the autumn fresh specimens of the fly amanita, pounds them with a pestle quite small in a jar, lets them stand well closed until they become slimy or like gruel. Then one takes a feather or brush and smears all the cracks and corners where they [the bedbugs] keep themselves, and this procedure is repeated several times at monthly intervals. The room stinks for two or three days, but then the smell disappears. These nasty creatures die of it as if the plague had come amidst them, and whole bug-families perish as if from the Black Death. Although this remedy is simple, it is surer than anything else hitherto invented, and with its aid several houses in Upsala have now become free of bugs.

In a note on the next page Linnaeus adds that he has learned of this method for the first time from a Mr. Bern, Cashier of Interests in Upsala. The text is in Swedish.

For us the striking thing about this description is that it is a report on a novelty. Certain families of Upsala were putting the popular reputation of the fly amanita to a test, and their first impression was enthusiastic. Why had they not been using it for centuries? What were their final conclusions, say five years later? The answers to these questions are not vouchsafed to us.

After Linnaeus the references to the fly-killing potency of the fly amanita in mushroomic writings are innumerable. All the mycologists believe in it - with one dissenting voice. None puts it to a test - with one exception. The French mycologist Jean Baptiste Bulliard, in his *Histoire des Plantes Veneneuses et Suspectes de la France*, which he finished in 1779, dares to strike a sceptical note. Speaking of the fly amanita, he says:

I have never noticed that it kills flies, as several authors assert. I have had specimens, raw and cooked, for long periods in my apartment. Flies light on them, and seem even

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to eat them, without bad effects. But I intend to repeat this experiment with certain new precautions.

We know not the results of the promised experiments, but we know that when Bulliard died in 1793, he held the view that a new scientific name should be bestowed on the *amanita muscaria*, and he suggested '*agaricus pseudo-aurantiacus*,' presumably because he considered the old name false. The mycological world has not deferred to his wishes, nor even tested his premises.

-Dugs, flies, moths, and all kinds of larvae - in short, the insect world - constituted for our ancestors until recent times an order of nature instinct with supernatural powers, mostly malevolent and always awesome. Their strange shapes and stranger behavior, their incredible numbers and countless kinds, perhaps most of all their undeniable faculty of metamorphosis, may be at the root of this role that they played in the thinking of untutored mankind. The fly was demonic, and we believe that the 'fly-fungus' originally meant the demonic mushroom, a name that fittingly designated a mushroom with the virtue of causing inebriation. We believe that the insecticidal meaning has encroached upon the ancient and primary sense, and finally shut it out.

We know that bugs and flies were linked with supernatural spirits a long time ago. The dung beetle or scarab played a conspicuous part in the religion of the ancient Egyptians. The neighbors of the Israelites in the Old Testament worshipped Beelzebub, whose name meant the Lord of Flies. In the Greek New Testament, where that heathen god does not appear, the same name was used as a synonym for the Prince of Demons. The Biblical term crops out in modern literature, as in line 1334 of Goethe's *Faust*: Wenn man Euch Fliegengott, Verderber, Liigner heisst. . . "When one calls you Fly-god, Destroyer, Liar." In Nordic mythology the god Loki assumes the appearance of a 'fly' to enter the tightly closed apartment of the sleeping goddess Freya. He pricks her, and when she starts, deftly detaches her necklace and steals it. Whatever that 'fly' was, no one thought of it as a housefly, for the housefly does not bite.

In English the word 'bug' until the zyth century meant an evil spirit. Then, when that meaning fell from grace in good society, the word came to designate a creeping insect of the beetle class. Its etymology is unknown. It is current in Welsh in both meanings, in the simple form *bwg* and in compounds. It seems to correspond to Cornish *bucca* and to Irish *bocdn*, both meaning hobgoblin. We suggest that all these words are related to Anglo-Saxon *hue*, meaning 'belly'. The semantic link between inflatable sacs and demonic spirits would parallel the same double layer of meanings in our *pogge-cluster* of words. The

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'Bugge' that in Shakespeare's *Henry VI Part III* 'fear'd [= frightened] us all' would stand revealed as an uncouth relative of the nimble Puck in *The Midsummer Night's Dream*, and in these latter days of the Pooka that bathes the stage with benign mischief in Mary Chase's *Harvey*, and of Milne's Winnie the Pooh. Ernest Weekley in his *Etymological Dictionary of the English Language* says that 'bug' in the supernatural sense is obsolete, except in the compounds 'bugbear' and 'bugaboo', and other lexicographers lean to the same view. Surely they are mistaken: the tabu that hangs over words in low and colloquial use sometimes shuts off the minds of scholars from rich evidence. Few words are so dynamic and versatile as this one is in the United States. Besides bugbear and bugaboo, in compounds we have humbug, firebug, jitterbug, and that contemptuous word for an insane asylum, bughouse. There are of course the variants in -o-, - bogey, bogeyman, boggart (in England's North Country), possibly bogus, and the verbs to bogle and to boggle. The Oxford Dictionary in one citation offers grounds for supposing that 'buggy' was a nickname bestowed in the 18th century on a new design of two-wheeled vehicle, presumably because the makers had not yet got rid of the 'bugs' and the vehicle was insecure. In the United States a Big Bug used to be a common designation for an important person, a madman is 'buggy' and fit for the bughouse, a newly designed engine is usually full of 'bugs', and a specialist in any field is a 'bug' on the subject. In the course of casual reading in the American press, we pick out repeated uses of 'bug' that suggest demonic inspiration. From the *Saturday Evening Post* on March 10, 1951, we learn that all Dixie is bitten by the basketball bug. On March 15 of the same year the *New York World-Telegram and Sun* launches a drive for circulation with a 'Bugs Bunny Coloring Contest', the 'bugs' in question being demonic imps and not insects. On May 8, 1953, *The New York Times* in its 'Topics' says that Vice President Nixon has been bitten by a golf bug. On the same date the afternoon newspaper reports that the Allies seek to clear up the 'bugs' in the truce terms in Korea. On May 17, we learn in a book review in *The New York Times* that the defeated United Nations troops in Korea, when they were falling back as best they could in late 1950, referred to their retreat as 'bugging out', a term that suggested both devilish resourcefulness and the goddess Luck. On July 14 the *Daily News* of New York reported in big headlines that the 'boat bug bites thousands', meaning that summer throngs seek to go boating. The idea of distension is dominant in the vulgar American verb 'to bug out', meaning 'to bulge'. Tennessee Williams in his short story, 'Three Players of a Summer Game', has one of his characters say: "I walked straight up to them both, and you should of seen the eyes of them both bug

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out!".¹ If we are right, in this vulgarism the word preserves its pristine meaning, today largely superseded by a specific and secondary application to tiny, crawling vermin. On the campus of Wayne University, in Detroit, 'buggy' has been reported in recent years as a students' word for 'upset' or 'mentally disturbed'.²

It is easy to see how Bugg came to be an English family name, for it enjoys to this day a vigorous existence, with an -s attached, as a respected nickname; e.g., Bugs Raymond the once mighty baseball pitcher, Bugs Baer the beloved cartoonist and Hearst writer, and Bugsy Siegel, the gangster who died a sudden and violent death in surroundings of gaudy splendor. In June 1941 Charles Workman, known as 'the Bug', stood trial in the New Jersey Court of Common Pleas for the murder of Arthur (Dutch Schultz) Flegenheimer. When one of the Bug's witnesses reversed his own testimony, the defendant changed his plea from not guilty to non vult, and thereby avoided the death penalty but bowed to an inevitable life sentence. In the course of that trial one of the off-stage figures was Martin (Bugsy) Goldstein.

Let it be noted that in the minds of those who bestow these bug-inspired nicknames, they are titles in which affection, awe, and envy are mixed. They are an expression of deference toward the ingenious demons that possess the honored person. Let it be further noted that current usage inclines toward a plural visitation of imps, though in the case of Bugs Baer we can testify that in his immediate circle he like Charles Workman is often simply 'the Bug'.

'Bug' also turns up in place-names, as in Bugtussle, in Cullman County, Alabama. Curious about the origin of such a name, we addressed our inquiry to a citizen in nearby Bremen, whose reply deserves preservation:

Some forty years ago we had a postoffice here: Wilburn. Two drunks were fighting, Will James and Charles Campbell. James called it Bugtussle. So it has been called Bugtussle by a part of the people ever since that time. 12-20-49.

[Signed] G. C. Florence.

May Bugtussle forever remain faithful to a name born in Homeric circumstances, commemorating the spot where once strove together the two Big Bugs. In England we find a Buglawton in Cheshire and a Bugthorpe in the East Riding of Yorkshire, and Eilert Ekwall in his dictionary of English place-names permits us to associate these towns with our 'bug' of supernatural powers. 'Bug' displays a singular aptitude in America for assuming new meanings derived from its original sense, a power of verbal metamorphosis that befits

1. The story was published by Intercultural Publications Inc. in *Perspectives USA* II, pp. 15-39; see P-25-

2. See William White's article, 'Wayne University Slang', in *American Speech*, vol. xxx, no. 4, December 1955.

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the world of six-legged creatures. Take telegraphy, for example. In the early days of the telegraph, the transmitting key worked perpendicularly, and the telegrapher had to lower and release his hand for every dot and every dash. Later, perhaps half a century ago, a device appeared that permitted much faster manual transmission. The new key worked horizontally, to left and to right of a neutral position, making dots continuously as long as it was pressed to one side. The hand no longer moved for each dot, but only when dots changed to dashes. The thing seemed possessed of the devil, it went so fast, and everyone in the craft was soon calling it the 'bug'.

With the verb 'to bugger' a double problem presents itself. The meaning that is written into the criminal law comes from the French *bougre*, and seems to have emerged at the time of the Albigensian heresy in referring to the perverted practices attributed, unjustly, to the devotees of that sect. But throughout the English-speaking world there has always been an innocent use, as when the sailor says of his gear that it is all buggered up,¹ and when a Lancashireman pays another the compliment of calling him a 'rare old bugger'. In circles where an improper word is excluded, this verb has nourished down to our own times. We suggest that this innocent use offers us a verbal form derived from 'bug' as a sprite, that it is native in English, and that the younger word imported from France has led until recently a segregated existence. Today the bad word, becoming more widely known, is driving out the good (as Gresham says), to the detriment of the language. For education as it spreads breeds new misunderstandings and new ignorances.

In an English translation of the Bible that bears the date 1549, it was possible for pious scholars to render Psalm xci: 5 thus:

. . . thou shalt not need to be a frayd for any bugges by night nor for the arrowe that flyeth by daye;

a verse that emerges cleansed in the Authorized Version:

Thou shalt not be afraid for the terror by night; nor for the arrow that flieth by day.

'Bug' in the sense of a creeping, six-legged creature is first recorded early in the iyth century, but it may have been long in use on the tongues of the untutored people who made up most of the population of England. Are we dealing here with two words or one? The Oxford Dictionary reserved judgment on this nice point, but in a study of the word published in December 1935 and 1936

i. See Joanna Carver Colcord's *Sea Language Comes Ashore*, Cornell Maritime Press, N. Y., 1945, p. 43, for comments on the innocent use of the term by seamen.

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in the *PMLA* (the journal of the Modern Language Association of America), Miss Hope Emily Allen established beyond reasonable doubt that the two meanings belong to a single word. The six-legged beetle was felt to be the habitation of a demon, and took his name. The Oxford Dictionary reveals a parallel association of ideas in the word 'fly', for this word not only refers to insects but also has always meant a 'familiar spirit', a usage that survives to this day in the adjective 'fly', rated as slang by some, meaning nimble, dexterous, sharp.

In the Russian language there is an astonishing parallel for the two meanings of these English words. Children in Muscovy are admonished to behave lest the *buka* get them. The *buka* is the children's bugbear. The *bukashka* is any small flying buzzing beetle. Slavists consider that the two words are related to each other, and that both are keyed to the basic word *byk*, 'bull'. Until a thorough study of the demonic vocabulary of Northern Europe has been made, perhaps the door should be left open for alternative possibilities.

When Albertus Magnus and Valerius Cordus referred in Latin and German to the 'flies' killed by the fly amanita, what insect had they in mind? What meanings and associations did the words possess for them > Today 'fly' means the housefly, or, by extension, other species of two-winged insects. But this is a modern concentration of the meaning, the result of increasingly precise observations in the insect world. The Oxford Dictionary establishes the fact that in former times 'fly' ordinarily designated insects as divergent as locusts, moths, gnats, and the whole dipterous order. To this day there are High German dialects in which *Fliege* and *Mucke* mean both 'fly' and 'mosquito', as does the word *mich* in Frisian. The older usage survives in the angler's 'flies', which descend from all kinds of flying insects. In the Indian and Iranian languages the words for 'fly' are often used for 'bee' or are the base from which their words for 'bee' are formed.

Good illustrations of this early generic usage are to be found in Basque, where the primitive form of the word 'fly' was *uli*. In a variety of forms this word enters into the names of many insects: *eltxo*, mosquito; *uli farfalia*, butterfly; *eltzar*, caterpillar; *eltxu*, locust; and, perhaps the most interesting of all, a word used by the Basques of Guipuzcoa, *eultzza*, meaning a bee-hive, the second syllable being simply a collective suffix. A bee-hive is a 'fly-hive', and in the dialect of Bermeo in the same province, a wasp is an *ulabio*, the first element meaning 'fly' and the second being derived from the Romance word for 'bee', *abeille* and *abeja*.¹

¹ See Gerhard Bahr, 'Nombres de animales en vasconce', in *Revue Internationale des Etudes basques*, vol. xxvn, 1936, pp. 73-118, especially p. 77.

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The variable application of the words for 'fly' in former times was not a conscious use of a general term. It is to be explained rather by the ordinary man's inability to distinguish among flying insects, so that he was disposed to use without precision such words as he possessed for the insect world. This was common to the period, and therefore to all languages. The ordinary syrphus or carrion fly was considered for thousands of years to be the same as the honey bee and bore the same name: this is the insect that Samson found swarming in the carcass of a lion. The fact of metamorphosis in the insect world was known, and maggots and other carrion worms were known to be kin to the insect world, but the successive transformations were not carefully distinguished by species. In Dutch the word for 'moth', which is *mot*, serves for maggots also. Sometimes accidents of sound led to confusions in names. In English 'flea' and 'fly' are words of different origins, but the phonetic similarity caused them to be used interchangeably. In *Henry V* we learn that when Falstaff lay dying, he saw a 'Flea' stick upon the toper Bardolph's flaming nose, whereupon he said it was a 'blacke Soule burning in Hell'. What he saw was of course a fly, and the black soul in hell was, according to the beliefs of that day, its incorporeal counterpart, the Demon domiciled in every fly.

For all insects used to be considered agents of demonic powers and were clothed in a fearsome aura of mystery and magic. We believe we can adduce new and striking evidence of this. On an earlier page we pointed out that Satan was known in France at one time as *le Bot*, 'the Cripple'; and that this name came to be transferred to the toad, and in the form *hot volant* to the nightjar and the bat, nocturnal flying creatures of evil omen. We suggested that the form of the English word 'bat' is attributable to the French word, but we did not then point out the wider applications in English of the French word. 'Bot' in English is the larva of the gadfly; it occurs also in 'botfly'. What was originally a euphemism for Satan himself thus turns up in English as a word of the insect world. Satan resides in the botfly and in the larva of the gadfly. In Joseph Wright's *English Dialect Dictionary* we find that 'bot' and 'bat' are dialectal variants of each other, and that in various parts of the United Kingdom 'bat' is used for 'moth'. (The larger moths, nocturnal in habit, were formerly 'flies' of specially evil potency.) In many counties of England 'bot' has been used colloquially for all kinds of grubs and larvas, even turning up in Wright's pages as a designation for the flying 'bat'. The dictionaries declare that the origin of 'bot' is unknown; we think they have overlooked the multivalent service rendered by the French *bot* and failed to detect the common Satanic denominator between it and the English term.

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The word 'maggot', in turn, besides designating larvae, has always meant an evil caprice. John O'Donnell in the New York *Daily News* on October 28, 1952, devoted his column to 'Mr. Truman's Maggot', by which he meant "a maggotty individual full of whims", and the use of the word in this sense is richly documented in the Oxford Dictionary. In Smollett's *The Reprisal; or, The Tars of Old England* one of the characters says that "now we man [must] . . . defend her from the maggots of this daft Frenchman", who had been "sent away with a flea [sic] in his bonnet". The etymology of 'maggot' is unknown, according to the dictionaries. But if we view this word against the background of double meanings that it and 'bot', 'fly', and 'bee' carry, the likelihood presents itself that 'maggot' (which was spelled 'magot' in its first recorded appearance around the year 1400) is related to 'magic', and both are then to be explained as derived, via French, from the Necromancers known as the Magi. When the Flemings and Dutch in former times called mushrooms the devil's bread, they must have had in mind the demonic larvae, maggots, and 'flies' that batten on the flesh of many wild fungi.

In the Middle Ages delirium, drunkenness, and insanity were attributed to insects that were loose inside the head of the victim. This belief, strange for the modern mind, survives in many familiar locutions. A man has a bee in his bonnet, a fly (or bug) in his ear, or demonic bats (= 'bots') in his belfry. The Norwegians get flies into their heads or put flies into others' heads. To 'put a bee on someone' means to fix him willy nilly for a given purpose: in this locution the demonic intent is scarcely fossilized. It used to be said in French, when a man was getting excited, that 'la mouche lui monte a la tete', a fly is getting up into his head. Down to recent times *avaler les mouches* was a phrase for saying that someone had summoned up his courage, and the flies thus swallowed were of course demonic. Rabelais at the very end of Book IV makes the coward Panurge protest that, far from being afraid, he is braver than if he had eaten all the flies cooked in the pastries of Paris betwixt St. John's Day and All Saints'. There is a colloquial expression that circulates around Lyons and perhaps elsewhere: 'Ne prends pas la mouche': don't catch a fly, don't get excited. Of a man who is unbalanced one says, 'Il a l'araignee dans le plafond', he has a spider in his ceiling, i.e., in his upper story. The Czechs use an identical phrase: *miti mouchu* (or *pavouka*) *na mozku*, 'to have a fly (or spider) on the brain'. In Russian, we say of a man who is tipsy: *on c mnkhoz*, so-and-so is 'with fly'. There is a gesture peculiar to the Russians that we feel sure stems from this association of psychic possession with flying insects. The Russian when he suggests having an alcoholic drink is like as not to perform a filip against his neck



PLATE xxxvi. Hieronymus Bosch. The Hay Wain. Left Panel.
Madrid, Prado Museum.

1. Sterile base of Lycoperdon or of Calvatia sp.
2. Russula (palumbina?)
3. Russula emetica
4. Amanita muscaria
5. Psalliota (sylvicola?)
6. Clathrus cancellatus

7. Volvaria speciosa
8. Coprinus micaceus
9. Coprinus micaceus

10. Young Bovista or Lycoperdon
11. Coprinus niveus
12. Mycena (galericulata?)
13. Cladonia sp.
14. ?
15. ?



PLATE XXXVII

Otto Marseus van Schrieck. Moth with mushrooms.

Bale, Öffentliche Kunstsammlung.



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below the ear: this is so habitual that it is become a Pavlov reflex. Does not that familiar fillip invoke the demonic 'fly' entering the mind? According to the Icelandic-English lexicon of Cleasby-Vigfusson, under *fluga*, in Icelandic belief sorcerers would bewitch flies and send them to kill their enemies. This explains the modern Icelandic phrases, 'to swallow the fly' or 'to carry the fly', meaning 'to be the tool of another man in a wicked business'. In Basque folklore, sorcerers and other malevolent beings would work their will through demons that assumed the shape of flies, and sorcerers would carry the demonic creatures in a sheath such as anglers use for their flies today. In America little children to this day sing a nonsense ditty that invokes the 'bug' of demonic possession:

It's raining, it's pouring,
The old man is snoring,
He went to bed
With a bug in his head, And
didn't get up until morning.

Hieronymus Bosch, the greatest of Europe's painters of the demonic world, presents us with a superb illustration of flies in their demonic role. We find it in the left hand panel of the *Hay Wain*, where the momentous events that took place in Paradise leading up to Man's First Fall are portrayed with moving beauty. We reproduce the upper portion of that panel, wherein the observer sees that the angels tumbling down from Heaven assume the form of 'flies' - a diverse lot of winged demons, Beelzebub's host. The old meaning is far from dead even today. Recently *The Times Literary Supplement* published a poem by H. S. Mackintosh containing these sprightly lines:

Has Freud not hit the Devil on the snout?
Is not Beelzebub destroyed by Flit? Are
we important? Do we really sprout
Immortal souls that priests may manumit?

[Issue of Oct. 2, 1953]

Perhaps the reader will perceive the direction in which our argument is heading. We have seen on an earlier page that when the French refer to the *amanita muscaria* as the *crapaudin*, this by way of the Old French word for toad, *bot*, means the demonic mushroom. It is a word unrelated to insecticidal uses. In English that demonic word *bot* is transferred to the insect world, and shares with 'maggot', 'bee', and 'fly' the idea of demonic possession. When we find the *crapaudin* called the *Fliegenschwamm* in German, we sense a semantic identity. Both words are singularly appropriate for the inebriating mushroom, and they

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inform us that long ago, much earlier even than Albertus Magnus, the secret of this mushroom was known. And if it was known, why should it not, on appropriate occasions, have been put to its own great, even fearsome, use;

One of the most interesting examples of the Satanic fly in European literature is to be found in that classic of the Danish stage, Ludvig Holberg's *Jeppe of the Hill*, first produced in 1722. Two physicians are conversing. One of them speaks of his Lordship, who has had a strange, ugly dream, which so excited him that he imagines himself a peasant. Whereupon the other physician recalls a remarkable case ten years back: "... a man who thought his head was full of flies. He could not rid himself of the delusion, until a most clever doctor cured him in the following manner. He covered his patient's whole head with a plaster in which he had embedded masses of dead flies. [Query: were they the Spanish flies of the Pharmacopoeia >] After a while he removed the plaster and showed the flies to the patient, who naturally believed that they had been drawn from his own head and therefore concluded that he was cured." Here is a beautiful instance of the way a dramatist (or physician) puts to use an outworn belief that lingers on in the penumbra of man's consciousness.

Old and forgotten beliefs often survive in strange places, in usages that on their face are baffling. Miss Allen has pointed out that in the nursery language of little children, the homely words used for dried or inspissated nasal mucus, such as 'buggy bear' and 'bug', are linked with the spirit world. In Russian the corresponding word is *kozjavka*, which means larva or any small creeping thing. There is an expression, *vsjakaja kozjavka lezet v bukashki* - 'every larva would be a fly'; and *bukashka* is a diminutive of *buka*, bugbear. We believe that these nursery words for dried nasal mucus are a legacy of the medieval belief that when sanity returns to a man who has been out of his mind, an observant attendant can catch sight of an insect emerging from the nostril of the patient. Thus that escaping bug or maggot or bot or fly survives to this day in a metaphor on the tongues of unknowing children. We should add that this interpretation is ours, and not Miss Allen's.¹

This belief in the demonic role of flying and creeping insects is not confined to Europe and the Mediterranean. We think we find telling evidence in favor of our argument in that the area of diffusion of this belief embraces the Chukchees and Korjaks, the very peoples where the use of the fly amanita survives. Jochelson in his treatise on the Korjaks reports that if the eater of the fly amanita vomits,

I. For material relating to our discussion, see E. Hoffmann-Krayer's *Handvörterbuch des Deutschen Aberglaubens*, in the article *Fliege*, also the papers by Miss Hope Emily Allen to which we have already referred, as well as her paper on *Bogus* in *American Notes & Queries*, Sept.-Oct. 1941, and on the wood-louse in *the Journal of American Folklore*, April-June 1935.

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the people believe that the spirits of the demonic mushroom can be found in the vomit as 'worms' which then quickly vanish into the earth.¹ Bogoras in his study of the Chukchees says that the shamans think psychic disturbances are caused by insects, and they use insects in their treatment of mental disorders. The shaman catches an insect from off his drum, swallows it, spits it up, and applies it to the head of the victim; he then sucks the sick man's head. Sometimes the insect is imaginary, sometimes real.²

It befits the *amanita muscaria*, with its unique prestige among country-folk as the villain of the fungal world, that the pattern of vernacular names for it should be correspondingly subtle. Over large areas it is the mushroom with 'flies' in its cap. In France it is the domicile of the *hot* or toad, by which is meant Satan; and in the Basque *amoroto* we find the same presence. This raises the question whether the English 'toadstool' was not once the specific name of the fly *amanita*, just as in the Haute Saone Eugene Rolland reports *bo* as a designation for any gilled fungus, and in the Loire, *botet*, both presumably meaning, by way of 'toad', the Satanic fungus. We have said before that Rolland reports *tuo-mouscos*, 'fly-killer', in the Aude, and there this name, significantly, competes with another, *mijoulo folho*, the 'mad-mushroom', as though the two were synonyms. The idea of madness is reported in several other common names for the fly *amanita*: *mujolo folo* around Toulouse, *coucourlo fouolo* in the Aveyron, and *oriol foil* in Catalan, 'mad oriole', the oriole being the *amanita caesarea*. In the dialect of Fribourg, Switzerland, the *amanita muscaria* is the 'devil's hat', *tsapl de diablhou*. In all this nomenclature the toad and the fly are synonyms and complementary, and both mean madness and Satanic possession.

On a later page we shall discuss the small group of painters, mostly Dutch, who devoted their talents in the eighteenth century to still-life studies of demonological subjects. These painters, superb technicians, have seldom been surpassed in their solicitude for portraying nature faithfully. They assembled their curious compositions, not capriciously, but to express folk-beliefs that were already waning, and therefore their canvases offer us folkloric documentation of high value. So far as we know, this aspect of their art has not yet been studied. We reproduce one of these paintings, a canvas by Otto Marseus van Schrieck, which hangs today in the Bale art museum. The composition is admirably handled. In a small field there are more than twenty mushrooms, most of them identifiable. Dominating the center of the scene is the latticed fungus known as the *clathrus cancellatus*, here slightly constrained to suggest a death's head. On the extreme right is one of the *coprini*, caught in its moment of active deliquescence. There is a grass snake

1. Jochelson, *op. tit.*, pp. 582-4. 2. Bogoras, *op. tit.*, p. 464.

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(*natrix natrix*), a green or wall lizard of the *lacerta* genus, and a gecko not native to the Netherlands. The snake is about to seize a beetle. A dragon fly with a pronounced curvature approaches the large mushroom that seems to be a *stropharia semiglobata*. Of highest interest for us is the 'fly' that descends on the *amanita*. The Bale museum calls this insect a butterfly (*Schmetterling*), but this is an error. It is a moth, the most sinister of the 'flies', and the painter was so intent on an accurate statement of his message that he permits us to identify the moth as belonging to the family called saturnine, i.e., one of the saturniidse. Thus here in this nocturnal gathering heavy with demonic import we discover a 'fly', - the 'fly' that gives its name to the fly *amanita*, a 'fly' that for our ancestors was saturated with magical potency. Missing from the scene are the amphibia: neither toad nor frog do we see. Van Schrieck knew the virtue of economy in utterance, and the omission of the toad was for him obligatory. In the presence of the 'fly', the *padde* or *hot* would have been redundant, iconographically otiose, an intruder speaking the same message but in a different idiom. Its presence would mean piling not Pelion on Ossa, but *paddestoel* on *vliegenzwam*. The fly *amanita* holds an altogether extraordinary place in the folk culture of northern and eastern Europe. The deadly fungi are as nothing in comparison, and in the mycophobic world of the Germanic peoples no edible kind was of importance until recent times. For us it is altogether incredible that the grip of this *Fliegenschwamtn* on the imaginations of countless generations sprang from any insecticidal power that it may have. It possessed in men's minds a supernatural potency, the potency of the 'flies', and though direct, affirmative testimony is meager, we believe that the prestige of the fly *amanita* descended from a knowledge, in at least some circles at some period, of its divine or demonic powers.

Up to this point our argument about the fly *amanita* has been an intellectual exercise. We have offered an alternative explanation for the name. We have impugned the traditional explanation by challenging the credibility of the witnesses. Albertus Magnus and Von Megenberg were relying on hearsay, and so indeed was Linnaeus when he quoted a Mr. Bern about the bedbugs. Most writers place the fly-killing use at a distance from themselves in time or space, Clusius in Frankfort, Linnaeus in Smolandia, John Ramsbottom in Poland, Bohemia, and Rumania. Mr. Ramsbottom¹ also says that the fly *amanita* was 'formerly' used in England and Sweden for killing bedbugs, and thus he justifies the occasional occurrence of the name 'bug agaric'. But this term can not be really old, for Linnaeus by his great authority imposed the name 'agaric' on

I. See his *Poisonous Fungi*, Penguin Books Limited, 1945, p. 21.

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the gilled fungi and the use of 'bug' for 'bedbug' appears to be a modernism, whereas 'fly' and 'bug' in their demonic sense are truly old. Only Bulliard put the fly amanita to the test, and his findings seem to have been cleanly negative. But in support of Bulliard's scepticism we can add a story told to us by a Russian friend, Ekaterina Apollinarijevna Bouteneff. Her nurse in childhood was an unlettered peasant woman from the region of Riazan. Our friend remembers having seen this good woman time and again put out a saucer with a crushed cap of the fly amanita in it, a lump of sugar on top of the fungal mess. This was going to kill the flies, she would always say. But our friend always observed that the flies did not die. When she would ask her nurse why they did not die, the reply was always the same: "They are sure to die later."

In the summer of 1953, on our suggestion, the mycologist F.-E. Eckblad of the Botanical Museum in Oslo, working under Professor Nordhagen, undertook the experiments that were a desideratum for our case. In a letter addressed to us on September 8 he sent us his preliminary conclusions. They, like Bulliard's, were negative: "The fly amanita may contain matters poisonous to flies. But flies are not attracted to it, perhaps avoid it, and are not killed by it when used in the old way", i.e., mixed with sugar or milk or both. Mr. Eckblad warns that his findings must be considered tentative, both because his supply of the mushrooms had not been so plentiful as he had hoped and because several species of flies were present in insufficient numbers. But on the strength of the first season's experiments there was no evidence of insecticidal virtue in the fly amanita. On the other hand, experiments carried out during the same season at the Laboratoire de Cryptogamie of the Museum National d'Histoire Naturelle in Paris gave different results: the flies were drawn to the concoction and died from it, and they died more quickly when the milk was sweetened with sugar. Once again the evidence leaves us in suspense, and the experiment calls for retrial by various workers.

Even if the fly amanita kills flies, our conclusions will not be invalidated, for the name could carry two layers of meaning, one for housewives and the other for those initiated in sacred mysteries.

However, if it should develop that the fly amanita never harmed a fly, we should find ourselves confronted with a new question: how do we explain the legend? Why did Albertus Magnus give it the endorsement of his immense renown? Why is the *Fliegenschwamm* called 'fly-killer' throughout the Slavic world and by the peasants in certain provinces of France?

Let us assume for the purposes of our argument that we are right, and that the fly amanita was really the 'demonic fungus' of northern Europe for untold

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centuries of unrecorded history. Let us suppose that it was utilized for its inebriating virtue. Such use was certainly veiled in awe and mystery, and the secret was the precious possession of esoteric and (need we add?) illiterate circles. As the missionaries of Mediterranean culture and religion probed the northern forests and gained adherents, the custodians of the old culture, retreating before the new, would guard ever more zealously the lore that was their exclusive possession and that survived solely by oral transmission from generation to generation. From earliest times, in the pagan era, an alternative explanation for *Fliegenschwamm* must have been a convenience in satisfying the curiosity of the laity, and this popular rationalization was all that reached the ears of book-worms like Albertus Magnus. The use of the fly amanita as an inebriant may always have been reserved for rare occasions.¹

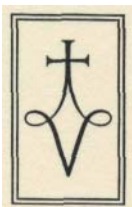
Students of cultural history must ever keep in mind the fact, abundantly established, that in a single population, living together contemporaneously, distinct cultures can co-exist largely insulated from each other, like the droplets in an emulsion, juxtaposed but never mingling. Albertus Magnus, though German-born, was culturally a child of the Mediterranean. The universal knowledge of which he was repository and teacher was the legacy of classic antiquity and the Church. He and his like rejected the old culture and were certainly not privy to its innermost secrets, whatever they were. In the end the churchmen conquered, of course, and the contents of the modern mind are the fruit of the cultural invasion of northern Europe by such missionaries as he. The nether face of northern Europe before the advent of the alphabet and the printing press, the autochthonous culture, is known to us imperfectly, in fragments. By the time of the witchcraft trials in the 16th and 17th centuries, the distillation process was common property throughout northern and eastern Europe, and *aqua vitcz*, costing almost nothing, had certainly swept away and obliterated any surviving use or even memory of the secret virtue of the fly amanita.

If the meaning that we have read into *Fliegenschwamm* should win approval, we still could not assert that when the Vikings went 'berserk', the fly amanita was the cause. The debate among Scandinavian scholars would not be settled. But the affirmative argument would be greatly strengthened.

i. The Russian symbolist, Andrej Belyj, in his novel *Vozvrat*, published in 1902, has his hero, Professor Trupov, write a work entitled *Mukhomory*, 'Fly Amanitas'; furthermore, in the delirium of the mad hero centaurs appear that are obsessed with *mukhomory*. We assume that the author was drawing his material, not from Slavic folk memories, but from Korjak practices.

End of Volume I

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