

trand Lonelle.

PERCIVAL LOWELL

AN AFTERGLOW

BY

LOUISE LEONARD

Member of the Société Astronomique de France; Honorary member of the Sociedad Astronomica de Mexico

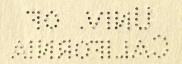




BOSTON
RICHARD G. BADGER
THE GORHAM PRESS

M336 L7LA BADGER

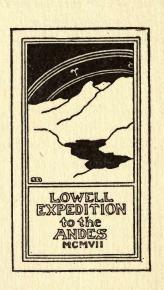
COPYRIGHT, 1921, BY RICHARD G. BADGER
All Rights Reserved



Made in the United States of America

The Gorham Press, Boston, U. S. A.

Preambient light—
Waning, lingers long
Ere lost within.
Just, kind, masterful:
Life's sweet constant,
Farewell.



Univ. of California

Land that he loved, that loved him! nevermore
Meadow of thine, smooth lawn or wild sea-shore,
Gardens of odorous bloom and tremulous fruit,
Or woodlands old, like Druid couches spread,
The master's feet shall tread.
Death's little rift hath rent the faultless lute:
The singer of undying songs is dead.

He hath fared forth, beyond these suns and showers. For us, the autumn glow, the autumn flame, And soon the winter silence shall be ours: Him the eternal spring of fadeless fame Crowns with no mortal flowers.

He hath returned to regions whence he came,
Him doth the spirit divine
Of universal loveliness reclaim.
All nature is his shrine.
Seek him henceforward in the wind and sea,
In earth's and air's emotion or repose,
In every star's august serenity,
And in the rapture of the flaming rose.
There seek him if ye would not seek in vain,
There, in the rhythm and music of the Whole;
Yea, and forever in the human soul
Made stronger and more beauteous by his strain.

WILLIAM WATSON

FOREWORD

HE personal tribute borne on the pages of this character sketch is given a sub-title which attracts me as a happily chosen metaphor of description. I have seen an Alpine peak disappear with the fading of day, but soon coming into light again in the deepening evening, radiant with cherished light. Percival Lowell was among men as of the heights, and, as here, memory of him endures.

Dr. Lowell, especially in the latter part of his aspiring life, became a notable pioneer in the advance of astronomical science; and, through his daring ventures in planetary study, he made gains which competent scholars believe are of the highest value for man in his study of the universe. When I began my acquaintance with him, in Japan, many vears ago, Dr. Lowell's mental quest was impelled in various directions, particularly into psychological interpretations of the Oriental folk among whom we were both resident. Already he had published his profound research, "The Soul of the Far East"; his "Esoteric Shinto" was then in the making. But even at that time he had been led far forward under the later master-interest of his life. His characteristic longing to know and to interpret the dynamic and vital evolution of other

Foreword

worlds than this, our earth, had begun to dominate his studies. Soon he was practically engrossed by the investigations thereby opened to him, and his memorable achievements were, in quick succession, gained.

In the tribute which here follows, no attempt has been made to portray Dr. Lowell definitely in his distinction as a commanding scholar and far-venturing astronomical scientist. That distinction is accepted as fact by the writer who was for a long time in Dr. Lowell's chosen work, closely associated with him in carrying it onward. tribute are given glimpses of what Dr. Lowell was as an individual, human personality; in effect, here is an "afterglow," from what may be termed a vie intime. Notes of his personal moods and habits have been chosen to recall his specific individuality: various characterizing anecdotes are remembered; memories of his loving studies of the minor things of nature; crystals, plants and trees, insects and birds and other animate creatures which were an incessant playtime stimulus to his curiosity, are collected. The writer has also added to her memorial tribute many quotations from characteristic letters, that these may give a yet nearer understanding of Dr. Lowell, both as a genius in science and as a man of affairs. In this tribute, I am confident, there is much to make more real and to confirm the admiration of many who have read Percival Lowell's various books, or who were privileged to listen

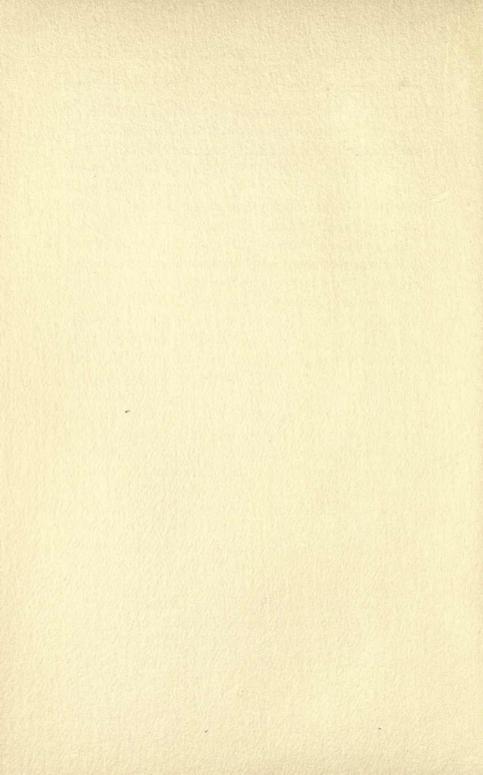
Foreword.

to his brilliant lectures on planetology in general, and, especially, upon the constitution and life of our Earth's near celestial neighbor, Mars.

But I must not trespass upon the domain which Miss Leonard's tribute well covers. I will only say further that I am much gratified that this tribute has been offered. For many years not only have I admired Percival Lowell's rare mental force and radiance, but many times have been privileged to know the excellence of his geniality and generosity as they marked his fine every-day living.

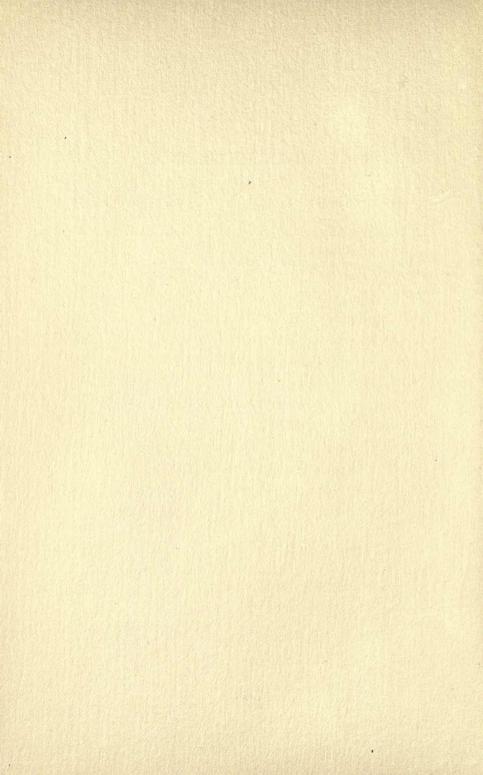
With much pleasure I welcome this memorial; and I feel highly favored in writing for it this note of introduction.

CLAY MACCAULEY.



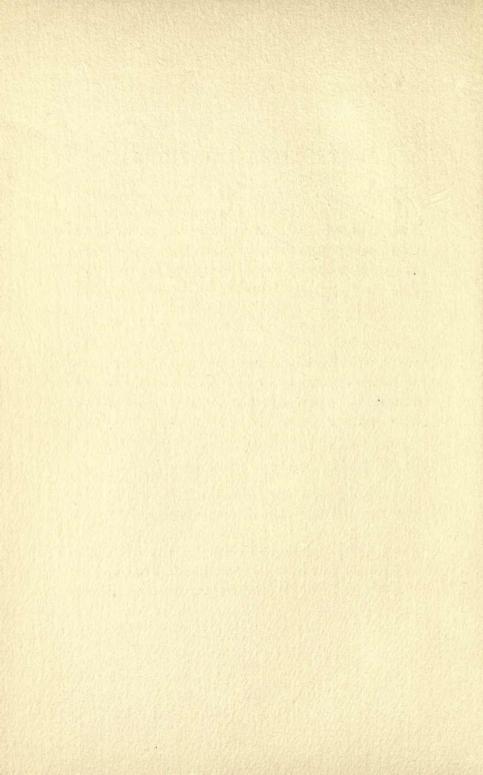
CONTENTS

PRELUDE .							PAGE 19
QUOTATIONS				•	•	•	45
CHARACTERISTIC	Notes	FROM	LETTERS				51



LIST OF ILLUSTRATIONS

Percival Lowell, taken in London in 1914, at th	e Ou	t-
break of the War	Fron	tispiece
		PAGE
"A Silly-Wet Day"	•	. 22
As a Harvard Student	•	. 24
His Last Harvest	•	. 30
The San Francisco Peaks		. 32
The Telescope Here Worked Day and Night	•	. 40
In His Japanese Garden—Tokyo	•	. 46
Library Chimney-Corner—Flagstaff		. 54
Percival Lowell—1908		. 60
His Bungalow, after Jane Peterson-Artist		. 70
What is the Time o'Day?		. 80
With His Japanese Iris—In the Arizona Desert		. 84
His First Telescope Honorably Discharged .		. 94
In the Study Window-Flagstaff		. 98
Lowell Observatory Eclipse Trip to Tripoli-	Setti	ng
Up		. 102
Percival Lowell, L.L.D		. 106
Oak Tree and Its Big Brother—the Pine in F	ront	of
the B. M. ("Baronial Mansion")		

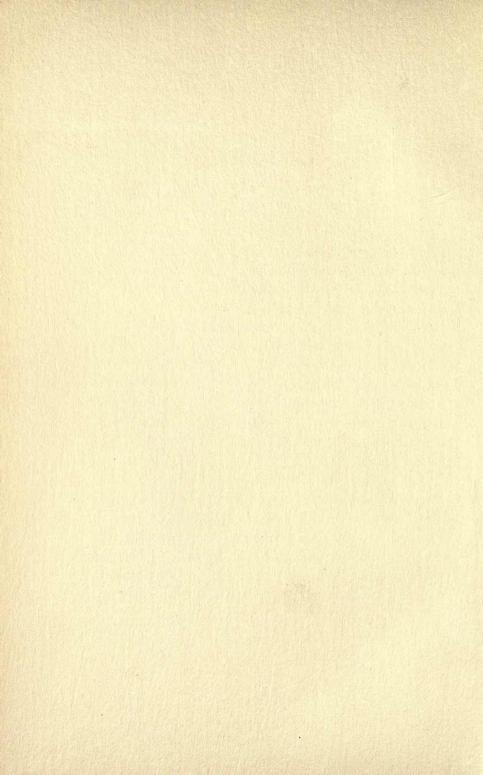


PREFACE

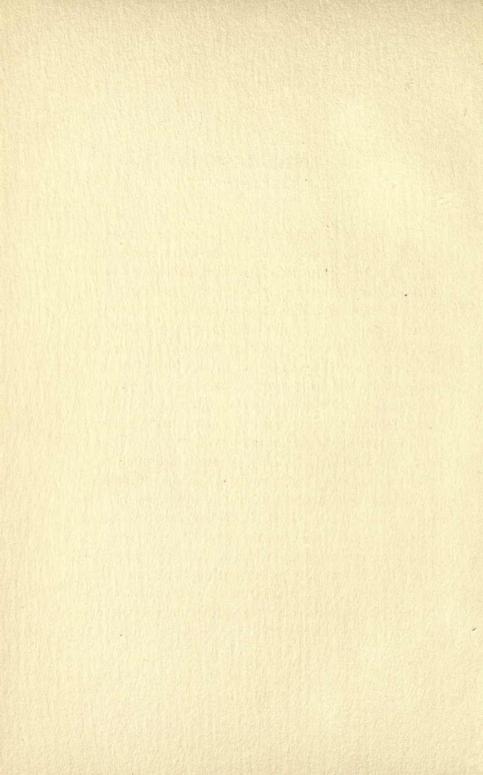
HE purpose of this book is to portray Percival Lowell as he was in his distinctive personality. May these reflections of his spirit bring with them a better knowledge of the accomplishments of this brilliant and unusual man. May they be an incentive to a more intimate acquaintance with his utterances.

For no one can speak more truly of him than he spoke of himself in his own glowing pages: where are depicted his brilliance, wit and humour; love of nature and the arts of the world; love of travel; and his first, best and last love,—love of science. Someone has said: "He had attained practically everything worth striving for." In Science he had reached his goal.

The writer has not attempted to manifest her own conception of Dr. Lowell but she has allowed him, through the medium of his letters, to furnish the picture which his friends and compatriots will recognize as the real Percival Lowell. She asks nothing more than to be thought of as having furnished merely the thread on which his pearls are hung.



PERCIVAL LOWELL AN AFTERGLOW



PRELUDE

T

MAN of moods," Dr. Lowell called himself, and this he was, as the writer can attest after being associated with him in his work almost daily for many years. He changed in an instant from writing sober science to narrating a telling story to a friend who happened in, taking the keenest interest in visiting with him as if he had nothing else to occupy his mind. The masterly ease with which he wrote of astronomy or attended to mundane affairs was extraordinary. At Flagstaff he would often leave his computations for a bit of exercise on the mesa to explore a cañon near by. In the midst of dining he might be impelled to rush to his dome for a study of the heavens; also he might be wakened from his slumbers at the necromantic hour before dawn that he could revel in its splendor and then exclaim: "I have been so overcome by her roseate blush of surprised confusion that I feel like an impertinent intruder who would better have waited until expected by the Sun." In such ways he showed his marvellous versatility in work and mood.

Percival Lowell

II

Dr. Lowell was "a charming host"—as his friend Mr. George Agassiz so well described him in his beautiful tribute. "He liked to have people come -and he liked to have them go!" he was heard to say many times. He cordially greeted people from everywhere at his mountain home and was solicitous that they should have due courtesies given them by his assistants in the dome and by the servants in his house. He was pained if he felt that anyone had been slighted—though a stranger to For two and twenty years he elicited much acclaim from travellers from Asia and Europe, from California and our East, who visited the Observatory as they passed through Flagstaff. They all became conscious that he felt keenly the responsibility of being Director and their host. He was simple as he was forceful; and yet at heart he was a hermit. Of an evening one usually found him alone by his fireside with his after-dinner cigar, or rather cigars, for smoking was with him a passion. Frequently, he smilingly quoted the saying: "The only excuse for a dinner is the cigar that follows."

III

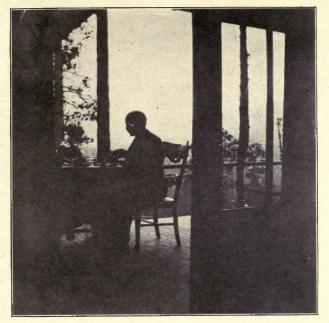
Possessed of splendid enthusiasms all phases of life interested him. His jocular moods were delightful. The following extract from a letter received by the author from one of Dr. Lowell's Oxford friends will show how this trait of the many-sided man strongly impressed itself upon those about him:—

"... I well remember the first or it may be the second time he was at this house. I had a lot of boys here, as I often do, lassoing and shooting in the garden, and the eager boyish way in which he joined them and shot and ran too, and the echo of his laughter as he did it is one of the pleasantest memories of the garden that come back to me. Also, I like to think of him at Flagstaff and the very happy fortnight when I enjoyed his hospitality there. Do you remember how we all tested our unaided eyesight on the big advertisement stuck up on the side of a drygoods store in Flagstaff,—we trying to draw it from the outside of the Observatory, and not verifying it with the telescope till we each had had a shot?"

Driven to his piazza one rainy day to lunch, because of alterations in the dining room, he jocosely named the picture on page 22—taken then—"A Silly-Wet Day!" He was a wit. His bon mots kept his guests in laughter. His dinner stories were sans pareils; sans reproches.

Percival Lowell

At one time, before enclosing the Observatory grounds at Flagstaff, cows, horses and burros from the town took pleasure in coming up the trail, sheep fashion, to trespass there: much to the annoyance of the Director. To an English servant, he had at the time, he said: "Harry, if these intruders come up again get out your shot-gun and pepper them." Harry, with his correct manners, promptly and politely replied, "Yes, sir." Dr. Lowell forgot the incident until the next day, when he received a telephone message from the owner of a Jersey cow that his servant had peppered her with shot. This literal obedience cost Dr. Lowell several dollars, but he treated it gaily.



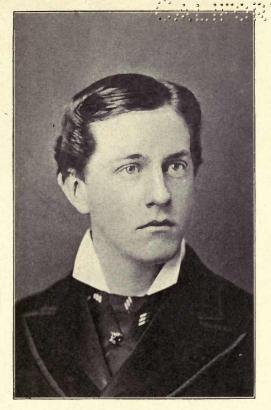
IV

His best friend in the far West was Judge Edward M. Doe, of Flagstaff; and his own words: "We insensibly find those persons congenial whose ideas resemble ours, and gravitate to them as leaves on a pond do to one another, nearer and nearer until they touch," are exemplified by this friendship. He found there, in the wilds, this learned gentleman. And his greatest delight was to dine with him, picnic, climb the mountains, scan the cañons, or what not, and discuss at large with him subjects of law. Indeed so well versed was Dr. Lowell, legally, that an outsider overhearing these conversations would have thought him a member of the bar or mistaken him for a judge himself.

Hundreds of people have felt the spell of Dr. Lowell's personal magnetism. So puissant was it that his presence was often felt even before he entered the room! He himself has said: "About certain people there exists a subtle something which leaves its impress indelibly upon the consciousness of all who come in contact with them. This something is a power, but a power of so indefinable a description that we beg definition by calling it simply the personality of the man. It is not a matter of subsequent reasoning, but of direct perception. We feel it. Sometimes it charms us; sometimes it repels. But we can no more be oblivious to it than we can to the temperature of the air. Its possessor

· Percival Lowell

has but to enter the room, and insensibly we are conscious of a presence. It is as if we had suddenly been placed in a field of a magnetic force." This but partially portrays his own personal force; and while the splendor of it is now gone, his most intimate friends still feel the charm and potency of his personality persisting adown the years.



V

His mind was, it is said, incomparably brilliant. His "mental altitudes" helped make the name Lowell illustrious. Soon after his graduation from Harvard, his cousin, James Russell Lowell, spoke of him as the "most brilliant man in Boston" and his later years brought only a fuller flowering of his early superior genius. His books have been translated into foreign languages, including even Chinese. And in his lectures: in these, as through a rift in the clouds like a star, he shone, while his audiences sat spellbound. He was a marvel to those who heard him. Many will remember that in his last lecture course before the Lowell Institute in Boston (later crystallized into permanent form), standing room was nil, and demands for admission were so numerous and insistent that repetitions were arranged for the evenings. At these repeated lectures the streets near by were filled with motors and carriages as if it were grand opera night! At the termination of this magnificent course there appeared in the Boston Transcript "Percival Lowell's Q. E. D." in which the writer said: "Lowell's lectures on Mars are among the most memorable ever delivered at that Institute, bearing his family name, which has commanded the services of the most eminent of the world's scholars in all lines of thought and research. He has bridged the gap which astronomers pointed out years ago in his

revelations concerning Mars between the condition of habitability and that of being inhabited. . . . This is a brave and brilliant débût for the new science, or rather new department of astronomy which Professor Lowell has named 'planetology,' and which is to concern itself rather with the development and life of the planets themselves than with their external relations, their place in a system, their period of revolution, or their cosmic origin and destiny in the scheme of the universe. Is there another planet, however, upon which there is any present opportunity to pursue planetological studies with equal facilities and the probability of similarly brilliant rewards? With Mars the deductions from postulates and analogies drawn from terrestrial data and laws could be confirmed from certain visible facts. But if there be no other as promising field, Mr. Lowell's wisdom in concentrating on Mars is justified the more and the thanks of the world have been well earned by his devotion to it." A fitting appreciation this is of Dr. Lowell's masterful achievements.

Another writer referred to a page in his "Mars" as the most brilliant one in literature. He said:

"... As I was watching the planet, I saw suddenly two points like stars flash out in the midst of the polar cap. Dazzlingly bright upon the duller white background of the snow, these stars shone for a few moments and then slowly disappeared. The seeing at the time was very good. It is at once evident what the other-world apparitions were,—

not the fabled signal-lights of Martian folk, but the glint of ice-slopes flashing for a moment earthward as the rotation of the planet turned the slope to the proper angle; just as, in sailing by some glass-windowed house near set of sun, you shall for a moment or two catch a dazzling glint of glory from its panes, which then vanishes as it came. But though no intelligence lay behind the action of these lights, they were none the less startling for being Nature's own flash-lights across one hundred millions of miles of space. It had taken them nine minutes to make the journey; nine minutes before they reached the Earth they had ceased to be on Mars, and, after their travel of one hundred millions of miles, found to note them but one watcher, alone on a hilltop with the dawn."

Dr. Lowell lectured abroad also with distinguished effect. He addressed the Royal Institution of Great Britain; and in their native tongues spoke to large audiences in Paris and Berlin. In France he was often mistaken for a Frenchman so fluently and purely did he use the nation's language. He was also at home in Korea and Japan where he spoke and wrote with comparative ease the complicated speech of these Oriental lands. Students of his books on Japan are much impressed by his acquaintance with the psychology of the Japanese people. He had what may be named a unique faculty, that of being able to free himself for the nonce from his own Western culture, and superposing it—if you will—upon the mysticism

of the Far East. He was, if one may be forgiven for putting it in that form, the "missing link" which connected and organically related the Soul of the West with the Soul of the East.

Dr. Lowell was fifty years ahead of his time as will be realized in later years by the young people who heard him lecture, and who studied the Lowell Observatory Exhibits of explorations of the heavens at Flagstaff. These exhibits, on transparencies, illuminated by transmitted light, were shown by invitation at centres of education like the American Museum of Natural History; Princeton University; Vassar College; the Boston Public Library; Brown University and elsewhere, where they aroused the enthusiasm of thousands of visitors.

These exhibits were not only beautiful but wonderful. They represented, so everyone might see, discoveries which could be made only at Flagstaff. They were the most advanced and remarkable exhibitions of the kind that the world had ever seen. Appreciated as this was by the older public, Dr. Lowell believed that the most important interest the exhibit could gain was the interest of youth. He began one of his last lectures by saying: "The value of a lecture consists not so much in the body of learning it may be able to impart as in the inspiration it gives others to pursue knowledge for themselves. Especially is this true when the lecture is delivered before an audience of youth. For those entering upon life are the most important hearers a lecturer can ever address. Youth is the

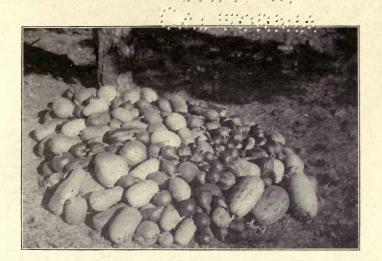
period of possibilities. Then it is that the mind is open, plastic to impressions which at the same time it is most potent to retain. . . .

"Plasticity of mind is the premise to possibility of performance. To retain it longest is the great essential to success. For the ability to succeed has been defined as not having to stop till you get there. In this more than in any other one quality does the great man differ from his fellows: in the gift of perpetual youth. We are told that the good die young; our regret being father to the thought. But certain it is that the great die young even though they pass the Psalmist's limit of three score and ten. The plasticity of their mental makeup is the elixir of life poor Ponce de Léon sought in vain.

"This possibility confronts all of us at the threshold of our career. Not that we are all born with like endowment nor that we all can attain it later. But we can all approach nearer our goal by keeping it constantly before us through the procession of the years. Especially important is it, then, at the start to set one's mind and ambition on that which is best. In the trenchant, if trivial, words of an Ivy orator of years ago at Harvard to his classmates: 'Fellows, don't be content to sit on the fence; sit on the roof. And remember that climbing there does not safely consist in leaps and bounds but in throwing one's heart upward and then persistently pursuing it step by step.'"

VI

Dr. Lowell was of the athletic type though not devoted to sports. At one time he owned the fastest polo pony between the Atlantic and Pacific coasts. He was fond of tennis and walking, but averse to golf and motoring. He usually took a train to a certain point where his motor car would meet him merely to transport him from tree to tree that he might pay his respects to the oaks and beeches he so much admired. . . . How little things entered into his big life is shown in his seed planting with its results. The photographs opposite picture the fruit of his last harvest at Flagstaff. Gourds were his pets, with squashes and pumpkins a close second. In that last autumn on Mars' Hill the fruits of his culture would worthily have graced a thank-offering to the gods.



LOWELL OBSERVATORY.

FLASSTATE , MAIZONA March 29: 1944.

Dar Mui Leonard.

Futter chronicles.

Mes. 23. First daisy; near most caion; a fall flower, Mar. 26. Found acres under oak is front of the BM. just barding into troot; planted it by the sundiel.

Wood-betony wary where; it's white - tepped - with - magenta coul und truscily effection.

Mar. 22. Sunday Exploration East; mill healt of Judicing another lindian hum just bryond that N Jackey Shile, which is this side of the new Cari: Shile. In the rums neveral assombads. Mos is one of the rooms a tree, probably 125 years old, showing that the rums were abandoned at least that long ago. Photograph I Took is willing.

March her came in like a laint and is oneking nost

Timerely yours

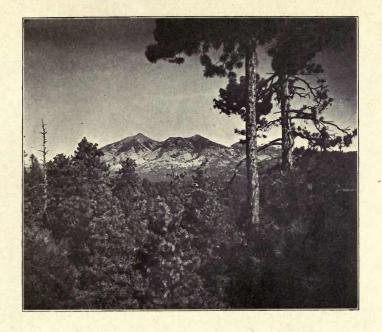
VII

As an explorer he stood on the tops of all the mountain peaks that came his way, and equally did he like descending to the abysms of cañons. But, indeed, he did not wait for the mountains to come to him; he sought them in the remotest corners of the earth; going to the sacred mountain of Ontaké in Japan; up the glaciers of the Alps and over the walls and chimneys of the Pyrenees. Speaking of Ontaké and the pilgrim clubs peculiar to it, he said:—

"As the chant swelled it sounded like, and yet unlike, some fine processional of the Church of Rome. And as it rolled along, it touched a chord that waked again the vision of the mountain, and once more before me rose Ontaké, and I saw the long file of pilgrims tramping steadily up the slope.

"Thus, humble though their active members be, the Ontaké pilgrim clubs furnish society not to be found in any other clubs on earth; the company of heaven is to be had for the asking. For the Ontaké pilgrim clubs are the only clubs in the world whose honorary members are, not naval officers, not distinguished foreigners, not princely figureheads, but gods."

The views from mountain summits enraptured him and the zest of the scenes there appealed to him greatly, but withal he was often on botany bent. The planet Mars was the only rival to his botani-



THE SAN FRANCISCO PEAKS
Which he ascended in quest of trees

An Afterglow

cal love! Study of the trees was his chief delight in his tramps afield. In a book in manuscript on "Peaks and Plateaux in the Effect on Tree Life," presented to the writer by Dr. Lowell, he shows a deep interest and an unusual knowledge of the subject. This is an account of his ascent of the San Francisco Peaks, of Arizona, in quest of trees. He found them aplenty in the respective zones which he has thus defined:—

Douglas	Fir	at	8700	ft.
Silver	" ?	**	9350	**
Cork	"	"	9480	66

In this charming fashion he describes his original observations:-"From the great height at which it first appeared, from the question mark given the identification at the time, and lastly from the same doubt expressing itself when it was encountered upon the descent upon the face of the mountain, it is probable that the supposed Silver Fir was Cork Fir and it will be provisionally considered. The Cork Fir is a tree of high habit, intermediate between the Fir and Spruce zones though belonging properly to the former. This surprising and truly spectacular Fir is a peculiarity of the San Francisco Peaks in Arizona. Relatively so unknown is it that botanists visiting the region are taken to it at their request as a natural curiosity and it has not yet found its way into the tree books."

It is noteworthy that some trees will bear eternal

Le Grand Hötel & Hötel des Alpes





A. Ahlburg, Directeur Cerritet, le 18 august 1908.

A most delightful afterarou.

Lepassed on a glacuer the

other day with a congrained goide,

one of the bright days of life.

To the porter of applied for a

luitable, fisher to grait man

from Lass Fizz to Mattmerk.

Not ar much for need of a goide,

Lepplained, as for some one to

talk to who knew the country on

the tray. He produced or the

surming did a young man

whose first remark pleased one.

Rows set out I booked at my

watch. Fire minutes past line

Said I. He looked at his - Mine agrees exactly " he replied "that is a sign that me shall agree a roughing: a pretty phrase mit which I begin a tramp. nor did after went believet. San Fee, you must know, is a little - advertiged apot high up wither Valais also, was amphitheatre of glaciers and peaks, almost un-Know of amelicans; Matthack a desolate point on the may to the monte more pass over into Italy. It, the letter, stands in the person of a colitary in by a glacier lake, the personification of out of the - world news: To far there was nothing Estraordinary in our tramp, only three hours of rine & 6800 feet. Buthe mich came to me to Explore. a glacier, to treat in me which

That hear get done as so leave more of Earth and more of Mars with process. I broached my much 5 Alfred, es he was called, and after mulling over the most Jeasoble way he eaggested after hunch at the Maltmark in the askent of the talus opposets to the Schwarz suburg gletcher which came down across the valley. Low Started a ticklick boulder and come plants across a etream, at which I refused anistance caused him 5 fell witon with me, and to Express himself interns which of underessed were gratifying and her forthult wanted to make ascents met he, the tales which was the glacieri lateral miraines conducted us after some time and weach breath. above the fost to where the glacide it self lay under neath Coated onthe

pelty debni. It has to cut one or, The eleps for us to get up and is then efter skirting served crevesses is me debouched above them on to the Ecomporatively level gluis . a broad & arrane of ice at transport like in the ice of a pond but granuler and pitted some dotance on with sounds of the latter stood like when so for in it midet. and I came upon what alfred In many pobbles and much dist. Carios came upon what alfred Said was the have of a chances. He mounted this arrive some distance and then I descending again crussed woless than Show the slaves has been retreating and how fast - There along a high E clope about the lake, with chadow where metastled three moranto one citiz up exact like its crain,

silent witness to his originality, as his discoveries in this field were various and his nomenclature unique. From the trees on the heights he characteristically jumped to the flora on the table-land below as he himself beautifully expresses on the opposite page. He found a new Ash-tree in a cañon in Arizona which will bear his name.

In all parts of the world, nature touched him alike from the Peaks of Arizona to the Woods of Fontainebleau and the plum-trees of Korea.

In prose writing he excelled. In poetry he at times was touched with the Divine fire. The following is a sparkling gem of that which even great poets might be proud to say "this is mine own." It is poetry of a high order. It follows the established rules of rhythm and rhyme and attains its object in the loveliest and simplest measures. It will serve to show one of the varied moods that went to make up the mentality and spiritual essence of Dr. Lowell.

"In Fontainebleau, whence now the light of day
Is shut by oaks, vast glaciers once held sway,
In undisputed ice their lateral moraines
With grasping fingers stretched to clutch the plains.
Gone all are now, their very memory sleeps
Save for the vigil one poor mourner keeps,
The falling teardrop of the 'rock that weeps.'"

¹ See "Rhodora"; February, 1917. Page 23.

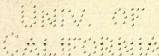
VIII

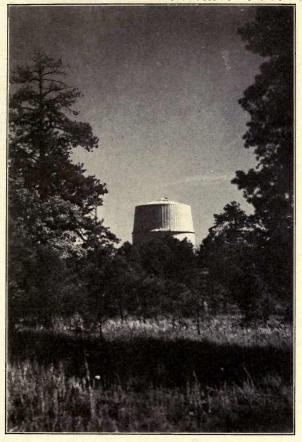
It will readily be understood that the question of site is of fundamental importance to an astronomer who wishes to solve the mysteries of the heavens. Dr. Lowell spared neither time nor money to meet this need, and he travelled far and wide in search of what he termed: "the best procurable air." In Japan; in the Maritime-Alps, Algeria, Mexico, California and Arizona, he diligently searched. Finally he found a plateau at Flagstaff, Arizona, at an altitude of about 7000 ft., which he discovered to be the best for his purpose. In this rarefied atmosphere his superb 24-inch refractor proved to be, according to the Hartmann test, the greatest space-penetrating telescope in existence. Under such favoring conditions he and his staff could observe and photograph stars fainter than any ever before brought into mortal ken.

Always with marvellous accuracy did he transcribe the wonders that he saw. As if by magic they appeared on paper from his pencil and brush, replicas of the planets themselves;—he was an artist as well as an artisan.

His big telescope was worked day and night; and while he often made important discoveries by daylight observation, sentimentally as well as astronomically he was fonder of those gained at night. He liked to recall the fitting words of his friend and colleague M. Camille Flammarion:

"Sweet hours of evening do not flee away! We love this universal calm which surrounds Nature before it sleeps. We love this unchangeable peace which descends from the rising stars! The starry sky which lights up the Earth which falls asleep, these are the spectacles which draw us away from a world of clamorous passions—pleasures of the soul which we enjoy in peace."





IX

Dr. Lowell himself has said, "How little the momentary living counts with the actual life"; but this was a paradox, for with him every moment counted. He was indefatigable. To those associated with him in his work he appeared never to withdraw from mathematics and astronomy-yet he found time for everything. His daily motto was "not the possible but the impossible." That he could indulge in and accomplish what he did in so short a life, comparatively, is astounding. In suggesting that anything should be done, even a trivial matter, he always added "at once!" Procrastination and he were strangers. When he bethought himself to publish an essay or a bulletin it was "no sooner said than done." His assistants were swept along in their various works on the crest of the wave of his enthusiasm. He was buoyant with strength, ambition, love, sincerity, nobleness of purpose, in fact, all that is highest in life. He was a dynamic force, yet gentle as a child. Indeed, his strongest characteristic was kindness of heart. Ever on the alert was he for deeds of kindness and for unapplauded service to his fellow man.

Instinctively the world associates him with the planet Mars. All the world loves the man of ideas who has the courage of his convictions. After continuous research, he was thoroughly convinced

that life exists on Mars; and he has left, for us, a full record of his reasons for so thinking. It is not essential that one should agree with him, or have his point of view in order to enjoy his utterances. All that he himself would have asked of his readers was an acknowledgment, actual or virtual, of his honesty of purpose. He went so far as to say in his final lecture tour through the Northwest:—"That Mars is inhabited we have absolute proof."

His successors in this sublime investigation assuredly will be guided by the same love of scientific truth that animated him. He has left in store all the material resources with which to build an enduring monument. Filled by the warmth of his fire; thrilled by his achievements, with eye single towards the discovery of "the light that shifts, the glare that drifts"—which is truth itself—we rest content in the thought that those who follow in his field will keep clear, widen and extend the scientific trail in which he was the master-pioneer.

QUOTATIONS

UNTER DEM ALLERHÖCHSTEN PROTEKTORAT
SEINER MAJESTÄT DES KÖNIGS FRIEDRICH
AUGUST VON SACHSEN
INTERNATIONALE
PHOTOGRAPHISCHE AUSSTELLUNG DRESDEN
MCMIX

ES WIRD HIERMIT BEURKUNDET / DASS DAS PREISGERICHT

> HERRN DR. PERCIVAL LOWELL BOSTON

DEN EHRENPREIS

ALS HÖCHSTE AUSZEICHNUNG FÜR HERVORRAGENDE LEISTUNGEN ZUER-KANNT HAT. / DRESDEN, SEPTEMBER MCMIX DAS AUSSTELLUNGS-DIREKTORIUM



LSCHRIFTFÜHRER



QUOTATIONS

BEFORE presenting the quotations from his letters, these tokens of appreciation of his genius by Dr. Lowell's contemporaries, Professor Emeritus Barrett Wendell, of Harvard, and the late Lafcadio Hearn, will illuminate them and charm the reader. In a letter to Dr. Lowell, from Japan, Professor Wendell says:

... "You have been in my mind constantly through these last few weeks. The 'Soul of the Far East' seemed good to me, when I first read it, How wonderfully good it is, though, vears ago. no one can begin to know who has not been brought face to face with the bewildering marvels of this utterly different world. I have just been reading in supplement, Lafcadio Hearn's 'Japan,' which gives your brilliant psychology the historical setting almost needful to bring out its full power. As you go on, I reverence more and more such power as yours of doing things really. If you had never done anything but this excellent trace of your past, you would stay among those who will never be forgotten. . . ."

(B.W.)

Tokyo, June 11, '11.

In a published correspondence between Mr. Hearn and his friend George M. Gould, Esq., Mr. Gould writes: "Perhaps I should not have succeeded in getting Hearn to attempt 'Japan' had it not been for a little book that fell into his hands during his stay with me. In sending it to me he wrote:

"'Gooley! . . . I have found a marvellous book . . . a book of books! . . . a colossal, splendid, godlike book. You must read every line of it. Tell me how I can send it. For heaven's sake don't skip a word of it. The book is called "The Soul of the Far East" but its title is smaller than its imprint.

"HEARNEYBOY.

"'P.S.—Let something else go to H——, and read this book instead. May God eternally bless and infinitely personalize the man who wrote this book! Please don't skip one solitary line of it and don't delay reading it,—because something, much! is going to go out of it into your heart and life and stay there! I have just finished this book and feel like John of Patmos,—only a d—d sight better. He who shall skip one word of this book let his portion be cut off and his name blotted out of the Book of Life."

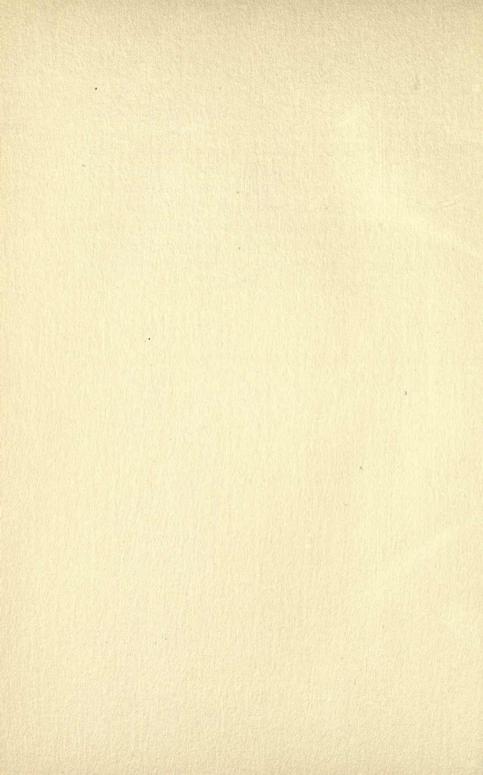
Later came a note about the book which brought this unalloyed and characteristic touch:

"The man who wrote 'The Soul of the Far East' and 'Chosön' is nevertheless an accomplished math-



An Afterglow

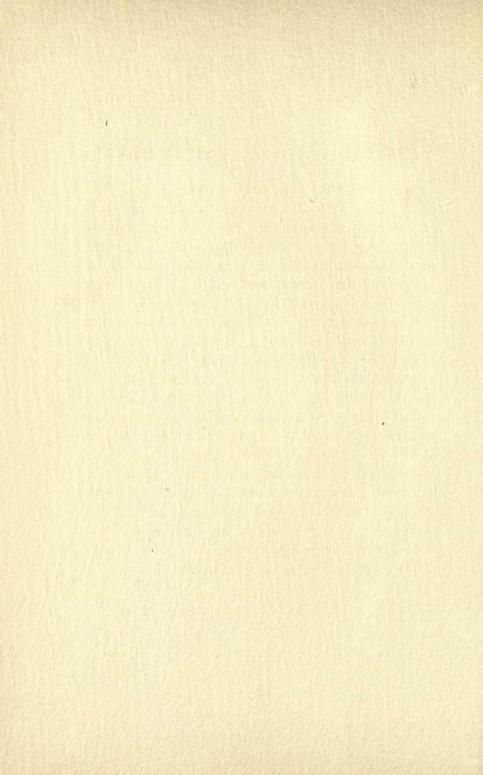
ematician. But you will notice that his divine poetry touches only that which no scientific knowledge can explain,—that which no mathematics can solve,—that which must remain mysterious throughout all conceivable space and time—the fluttering of the Human Soul in its chrysalis, which it at once hates and loves, and hates because it loves, and strives to burst through, and still fears unspeakably to break,—though dimly conscious of the infinite ghostly Peace beyond."



CHARACTERISTIC NOTES FROM LETTERS

"Men live on by what they have written while they are alive."

P.L.



THE QUOTATIONS FROM LETTERS

COMPREHENSIVE biography of Percival Lowell would include much informa-Ltion concerning his many sided personality taken from his correspondence. As a scholar, scientist, man among men or wise observer of things and events, and particularly as considerate friend he was continually disclosing himself in letters and impromptu scribblings. In this grouping no effort has been made to present a wide gathering of these contributions:—only excerpts, from some letters which the writer received from Dr. Lowell in the course of a long association, are presented. But these notes are valuable as expressing excellently much of his serious thoughtfulness and knowledge, as well as showing some of his peculiar pleasantries of fancy and his varying moods. has seemed desirable to add these quotations with the hope that they may aid in making Dr. Lowell's personality more distinct in the light of his own flowing and informal phrasings.

The notes quoted are in chronological order.

SANDY'S FLAGSTAFF

And the Limited arrived on time; indeed five minutes ahead of it! And on the platform were all the young men: Mr. Lampland the first to greet me, and dear old Doe.

Feeling rather too tired I did not that night go up on the hill, but yesterday I spent there. Termansen is very faithful and burst into tears when I told him that his wages would run right on during his vacation. He is feeling ill and looking very bad and I have told him he must go off again. The man they have in his place, or as assistant—for they need two with their night work—is also a good worker. His name is Worthington and he seems worthy the name.

Last night I dined at the Does' and Mrs. D. showed me a crack straight across their dining-room ceiling which had been made by the earthquake of San Francisco. She said the whole room rocked and that she had to hold on to something. I did not think to inquire about it on the hill, taking for granted, indeed, that nothing had happened; but today I shall be more inquisitive.

The sweet peas, just up, asked after you, and the Indian paintbrushes sent you their regards.

Jansen told me of an interesting observation he had made on the garden. The plants there are nipped by the frost when those on the higher ground about the house escape and I have noticed the fact

An Afterglow

this year. The cold of ten days ago and since has killed the nasturtiums down there while those in your plot by the walk to the study are all right. I shall plant some more tomorrow.

LOWELL OBSERVATORY
FLAGSTAFF

I am up in the study on Mars' Hill, listening to the ticking of the clock and looking at the room and its setting without. As I can see you reading, it is natural that I should speak to you—and this is a case where the pen is mightier than the (s)word.

It is a last quiet study afternoon here, for tomorrow the Limited that we see rolling down to the station below with its long-drawn whistle should be taking me in a moment eastward too.

A tall yellow flower—the single-blossomed one—nods to me out of one window, while Indian paint-brushes blush at me from without the other. There are numbers of the last this year, more than I ever saw before. Paint-brush Point you remember—where the earliest are found is carpeted with them and from the rock where the very first always appear. I yesterday plucked one which I shall tuck between these sheets when this goes into its mailbag sleep.

Yesterday evening we had a mass meeting in the court house to rouse the people to advance the town,—the meeting, of which the clipping already sent you recounted the futurity. Doe and I spoke, Doe outdoing himself and the thing was a success. A committee was appointed to draw up a petition of the A. T. & S. F. Ry. Co. to build a suitable tour-



ist hotel where people can come and be comfortable; and today it is being circulated that I may carry it Ripleywards tomorrow. The thing has taken and the town is roused.

BROWN'S HOTEL LONDON, W.

My sister arrived yesterday after a record trip for the *Arabic*, of 6 days 17 hours—and decided to come to this hotel where she is now. My brother and his wife are still in 34 Clarges Street, and we all dined together there last night.

Have finished my motor trip, a successful performance in spite of the usual impossible chauffeur. The prehistoric and the old Roman remains were most interesting. I am now having their presentments printed, and when done shall send you copies.

I suddenly came upon snail-shells and at once pounced on them for Prof. Morse. They lay a foot or two under the sod and although they have no connection with the mound-builders, take on a little glamour from the juxtaposition. There were three kinds of them and I have sent him all in a pill-box.

LOWELL OBSERVATORY

FLAGSTAFF

Here are some of the latest views of Mars. March 7-8 was a warm day in the planet's southern hemisphere, for the frost on Hellas half vanished between the two dates.

NEW YORK

EN ROUTE, BOSTON

Some of the red maples are now decked in real coral, some in orange-brown. Tie ribbons round your Concord trees and see how each turns in the fall.

The orchids said bon jour to me very prettily this morning.

AM BORD DES SCHNELLDAMPFERS "DEUTSCHLAND"

A smooth, neutral-tinted voyage; the first three days as hot as Tophet. My blue silk jacket too warm. Wanted to reduce myself to my lowest terms and then get rid of some of them. Not a soul on board I know. Sit opposite Julia Marlowe who has never once appeared at table. Have had chats with her manager of a theatrically intimate character. He has hoped to get her down for the sake of the bashful doctor at whose table we sit and who wants to see her. Last evening the Captain asked me to come to his cabin for coffee. There were others; among them Mrs. and Miss Cramp of Philadelphia and a Mr. and Mrs. Wallach Goodrich of Boston. Of deck friends made and extended elsewhere, there are a few and as the Germans say sonst nicht. Life in bits as usual with life; oases of episode strung on the desert of existence.

We expect to be in Plymouth Bay on Wednesday morning.

We are now three-quarters way across, the only motion so far being made by the ship. Even so it is not so hard to write as on the transcontinental trains.

HOTEL CECIL

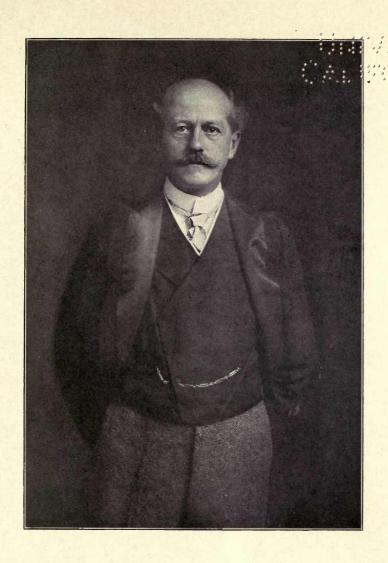
Your note, though only two hours after me in starting, was days behind before it got here, only arriving yesterday. This is the penalty one pays for taking the fastest boat. Was it not fortunate I did not take that of three days before and then the midnight train to London? Had I done so I should have made a farther journey to a land whence there is no return.

Here engagements multiply as I stay. One of the first things I did was to run across Millet who is trying to get the English Admiralty to adopt the submarine sound signal and seems to be succeeding. I see much of him, and yesterday he took me to tea at the Alma Tadema's who, whether primed by him or not, welcomed me as the Martian. Yesternight I dined with Kellogg, the man whose picture is in the left-hand corner of my desk, coming last winter from London. It was a pleasant little affair of six, Mr. and Mrs. Foster,—he the son of the celebrated surgeon, Sir Michael Foster, and she the former wife of Governor Russell—among the company.

This morning comes a note from Sir Robert Ball asking me to lunch and dine in Cambridge next Sunday,—also last night a telegram to lunch with Lady Playfair on Thursday.

UNIVERSITY ARMS HOTEL CAMBRIDGE

Here I am-for lunch with Sir Robert Ball at the Observatory and for dinner at Kings'. I came within an ace of not getting here. The only Sunday train which would get me down in time was the 9:50 from Liverpool Street. I had thought as I thought of everything I should need-the sacred toothbrush, the indispensable night clothes and so forth and had reached the station with abundance of time, when, on going toward the ticket wicket, I discovered to my horror that I had left both my note and my coin pocketbooks behind. I had not time to return for them and no later train would do. On the hope that one of them might have crept into my valise, I went through it, but fruitlessly,-discovering only my discarded pocketbook with American bills. This the kindly porter said would not do. Next it, however, I spied a metal purse into which I had put, in Boston preparatory to France, some French gold. Could I change this? The porter said there was an exchange in the station which would close soon. We went. Alas, it had closed already. As a last resort I tried the ticket seller and prevailed upon him, for an exchange consideration, to accept my gold. And my ticket there and back was bought. Then I settled myself in my railway carriage and arrived safely —but still a pauper. Gold and paper everywhere about my person and belongings but not an ounce



to use. Let us hope that the landlady of this hostelry will be as tractable as the ticket man; if not you can conceive me as living forevermore in Cambridge unable to get out. Hope you will excuse this inexcusable J pen.

THE PRINCES' HOTEL, LONDON, S. W.

Thank you for your au courant letters. Just before I got here it was terribly warm for London, 80° F. But I knew nothing of it, the thermometer having sunk again before I stepped ashore.

Except in the churches you would not know that the suffragettes existed. All I have seen of them was a respectably dressed one selling "The Suffragette" at the Swan & Edgar corner of Piccadilly Circus.

On Thursday last I was the guest of the Royal Society Club—the inner circle of the Royal Society—at dinner. I sat at the right of the president of the Club, Sir Clifford Allbutt, and Sir David Prain, the Director of the Royal Gardens, Kew, on mine. After the sweets and the regulation toasts, they got me to talk; and I showed them some of the slides, passed round the table. Tonight I dine with Prof. Boys at his club, the Saville. Thursday I leave for the Hotel Chatham, Paris.

Dr. Slipher's cable arrived very apropos "Spectrograms show Virgo Nebula rotating."

LONDON

Thank you so much for taking all that trouble. I heard last night at dinner that he, Sorolla, was not appreciated in England and that therefore his pictures on exhibition here could probably be had cheap. In Paris, last season, his gallery was thronged. The Chief of Police was at the dinner and told me some interesting items of motor news. Thought it would be good to know him. John, for instance, was twice stopped in the afternoon for his oil fumes. Amusing, considering all I have said on the subject.

BROWN'S HOTEL, LONDON W.

I strolled down Piccadilly this afternoon by the side of Green Park in a clear autumnal-feeling air and thought of trees and walks on the other side of the Atlantic. It is a poverty-stricken flora one sees here especially in town; -- plane-tree, plane-tree and again plane-tree, until one wishes all were not so plane. I have become possessed of a most excellent English book on trees, native and imported, quite the best, everything considered, and shall I say quite as good as our best; for I can't say more in any sense! And I speak by the book when I say the flora, the tree-flora is poor. There is, for instance, but one native maple, which is unlike any we have, and hardly more than a shrub. I have lately seen it on the Continent, too. Then, they have only one oak, a species of white oak. Indeed I saw only specimens of this great class abroad. No red oak species at all. What we call the English elm is no more English than American, being an imported tree in both countries. And so the tale of depletion goes on. Of yews, however, they may boast, several kinds being patently in evidence. Their beech cannot stand beside ours without being ashamed of both its skin and its diminutive leaves. It hasn't a good complexion, and as its cuticle is its chief attraction, the result is failure.

Tomorrow I start on a motor trip and my invaluable book bears me faithful company, although I have noticed one tree I can't find in it at all.

BROWN'S HOTEL, LONDON W.

Picked in the public garden of Geneva, a variety of the *Acer negundo*, or ash-leaved maple such as we found on the hill above Belmont in the walk from the Waverley Oaks. This variety has particulored leaves, sometimes producing albedoes like the sprig enclosed. Since then I have seen them growing in cultivation here in England. With this you may talk learnedly to such botanic professors as you meet.

I am thinking of crossing the Channel tomorrow and sailing in a couple of weeks. Shall wire when, sure.

The Lake Placid Club card has just come out of regular mail routine by some obliging steamer. Berths back are very scarce. "All taken" they assured me at the Hamburg-American line office yesterday. So *poplar* is our land—we must get back to it for all our wanderings abroad.

PARIS

Nothing was nicer to hear than the echo of pleasure which breakfasted with me this morning in the letter from New York of the 17th—the letter that bore upon its cover the heads of three gentlemen in three colors, not inappropriate. Franklin of evergreen memory; Washington well read of; Lincoln making one feel blue.

I am glad my letters and postals are beginning, the carrier-pigeons, to come in; for many have gone. I have tried not to miss a steamer—though I have, but I have also duplicated some.

Today I pilgrimage out to Bellevue, Meudon to déjeuner with Deslandres and Flammarion. Yesterday a telegram from the former came to me here to do so, and I said I would. I shall take one of those bateaux mouches which I do not fancy; toil up in spirit, the funiculaire, and return the same way perhaps with Flammarion qui sait. My soul, or sole, is fast wearing out with Europe, and I know of no place but home to have both repaired. My cable "sailing Lorraine first" will have apprised you of the fact that I am trying a new line. Hope it won't prove too trying, nor the weather in New York and Boston later. Here it is fairly cool if nothing else.

PARIS

I peg away at my lectures with fair success and as far as picking up copy-books for them goes may be said to have succeeded—my last, for the final full draft, a brilliantly cover-colored affair with a map of France for frontispiece. It should be Mars.

Bearing upon Mars, on the rectilinear appearance of the canals, is the clipping enclosed which will interest you and Morse if he drops in. It explains why the lines do not appear as curved as they should. The eye rectifies them.

My lectures are to be a wedding of Earth to Mars through geology. In consequence I have been devouring works on the subject of our own Earth's history, both English and French.

One makes curious visual acquaintances in the courts of these French hotels. There is a man over the enclosed way who spends his time at little else than trimming and brushing his hair! He only varies this performance by brushing his clothes.

HOTEL LAFAYETTE

Got here to find myself in the midst of the football rush. Not a room to be had at the Walton, the Stafford or the Bellevue; and at first only a dirty little out of the way bathroom here, minus towels, a mirror or natural light. On the other hand it was two bathrooms in one, for the floor above was so cracked that the contents of a higher tub came down in showers into this. Thus were things equalized.

To add to my miseries I discovered that the soles of my boots were too thin for comfortable treading of the cold world. So I went out and purchased a pair of "gums" which looked small when on my feet and huge off them, over there in the corner. For I have at last fallen upon my feet, having secured by chance the corner room up one flight, giving on Broad and Sansom Streets, open-eyed to all there is to see and flooded with sunshine. It is so good I shall continue to perch here, going over to the Walton for meals, mail and music.

I must have left a table of Jupiter's family of comets—one page, in my writing, in the depths of my desk; also a table of an X, etc., by Mr. Manson, the second set. You will know it by its being in two sheets, the numbers in the left hand column corresponding to those in my table.

HOTEL LAFAYETTE

Your yell-oh note of encouragement gave me pleasure, and I send you the echo of its appreciation in this line just before going to the test. If the test doesn't succeed on others, after your kind encouragement, I shall indeed be testy with myself. The lantern slides, thanks to you, arrived early—for breakfast this morning. So that is well.

I shall leave here Sunday probably for the Manhattan, New York, where send mail.

FLAGSTAFF

The Peaks this morning are white-laced from yesterday's storm, a white mantilla over their heads and shoulders. With yesterday's mail, too, came a long-given up letter from Morse Sensei, pouring ashes on his own head and beating his breast for his failure to write before. He enclosed a letter from Elihu Thomson of a most interesting character. Prof. Thomson made himself some time ago a teninch glass, and this summer he has been trying to see something on Mars. Most of the nights were bad, but on July 5th he was vouchsafed an hour of capital seeing and behold the canals came out. His letter is so much to the point that Mr. Lampland wants it published. So I am writing to Morse to see if it cannot be arranged. I am going to suggest to Morse to embody it in an article for the Atlantic. I shall copy the letter for you in case I return the original before you get back.

I am very glad you are having a pleasant time, and I read your letters and scanned their enclosures with much satisfaction.

We narrowly escaped a frost last night. It was certainly uncommon cold—nice, too, this first freshness of fall, when the mid-days are still sun-warmed and bright. The box of morning glories on the piazza have been in bloom for some days; side by side with the flowering potted geraniums. Those by the bathroom are mammoth, veritable Jack-and-the-Beanstalk ones.



COPY

SWAMPSCOTT, MASS.

Dear Prof. Morse:

You will be interested to know that for an hour last night between eleven and twelve the air was so steady here that my ten-inch telescope put on Mars, not only showed a great wealth of detail but also some of the canals, and at times, only at times, a network appearance of them. I have been at it for three weeks on every fair night, but not until last night was there definite result, though at times the effect was as if there existed markings too evanescent to be made out. I despair of getting another such night in this climate. Perhaps the smoke, and general stirring up by bonfires and fireworks, had temporarily worked the atmosphere to uniformity. At any rate, it did not last more than an hour.

The proof that there is no illusion consists in the fact that only at the moments of very great steadiness could the detail be seen:—canals and all. If the effect were the result of optical illusion, it should have appeared on other nights and on last night it should have been present even when the disc was only fairly steady.

The reality is exactly the contrary. To see this finer detail demands the maximum of steadiness, and therefore the appearance when seen is that of the true markings of Mars.

It is probable that the nights of Mars are cold

or freezing with deposition of water as rain, sleet, hoarfrost or snow, which is remelted each day and, largely evaporated in the sunshine.

Such a process of repeated deposition and evaporation would shift the water gradually from the melting polar cap-area to the equator and beyond and amount to a flow of water, at least in its effects.

I thought you would be interested to know this climax of a little persistent sky-gazing. I am writing you while the matter is fresh.

I find that though my left eye is perfectly good I cannot see details as with the right eye. This shows that training is needed and one becomes right-eyed just as he becomes dextrous with the right hand by long practice. This accounts, too, for the fact that quite often persons using the telescope or microscope, but who are not accustomed to such use, fail to detect minor details which to the trained eye are not only visible, but even easily seen.

Very truly yours,

ELIHU THOMSON.

P. S. The south polar cap with its border of blue-green was a very interesting sight in itself. Everything was clear cut, sharply defined.

FLAGSTAFF

We have got some more interesting photographs and some capital prints of enlargement on solis paper. Agassiz's article has come and it is excellent. My copies of it have not yet arrived. Watered the peas yesterday and now it is raining again! The weather took the hint.

THE SHOREHAM

I had a most satisfactory day yesterday at the Observatory with Captain Barnette and Prof. Updegraff; first they are contemplating the following of asteroids discovered in this country as a business, and secondly they are going to reform the Nautical Almanac. So that the talk I had with Captain B. in January has become fruit and I trust that the suggestions of which Updegraff made note today will, too.

Socially I see nobody interesting though I had an agreeable dinner yesterday at my friends, the Wadsworths.

THE SHOREHAM

Herewith the letters. That of Mr. Agassiz among them. Let slides be made of the 1907 globe and also of one or two of his drawings and of E. C. Slipher's and of anything else your good judgment dictates—and express them to him. It is well to hear he is to lecture. Saw the Senate this morning, and believe I listened to a poor showing of oratory. We Martians can do better.

11 WEST CEDAR STREET

This morning I despatched you a paper containing the account of the Shinto rites yesterday. I must say the papers did it well. Mr. Arthur Warren was there and took just the interest one likes to see taken. The place was full and the audience gratified at being asked. While in the distance people outside the pale stood on carts, and boys even to the tops of far-off houses,—one perched on the tip of a chimney. Dr. Suga cut himself slightly but not seriously. He did very well considering, though it was not possible of course for a poor lone priest to come up to what he might have done in Japan. The rite was beautifully set forth and the setting of the whole enclosure worthy the most artistic people in the world. Policemen kept out the crowd and stared aghast, and altogether it was a relished function.

BOSTON

The Yellow-wood has been in bloom these last few days. I have not seen it at its prime but the tree itself is commoner than we thought. A pretty little dogbane asked to be picked. So I took it, and pressed it and have meant to send it along every day since. But it is coming.

Yesterday I fulfilled my promise to speak at the Roxbury Latin School graduation, and boys and others were good enough to be pleased. They seemed to think I stirred them. One young man from Harvard was overheard to say to his younger brother "He's bully"; to which the brother replied in a more stolid manner "He's all right." So I got the youth, which is the thing to get. It will amuse you to hear that the T reported of the things I said about carbon dioxide, the exact opposite. The reporter who came up to me after the talk for some explanations said he was an old Roxbury Latin boy himself.

SAAS-FÉE

View from my window. Notice the lateral moraine of the glacier and remark, from the fresh appearance of its glacier side (the left), how the glacier has retreated within a few years.

FLAGSTAFF

Flower Annals, 1909.

May 3 First Pea (the low purple)

" 4 Spurge threaten to bloom

Weather like summer.

FLAGSTAFF

Chronicle continued.—

May 11 3d row (my old one, just inside the wall) of peas bursting the ground.

First Indian paint-brush!!! on hill near "Dover" cliffs of Harry.

The horned toads are round in numbers. I presented the dead snake to one on the way home yesterday, and he fainted or feigned.

- May 12 Tiny yellow flower in Holly Ravine. Perhaps recorded before.
 - ' 13 Holly and Potentilla canadensis near the mullein patch. Radishes big enough to eat, and eaten.

LOWELL OBSERVATORY

FLAGSTAFF

Chronicle of the Flowers continued.—

66

66

May 7 First low wild vetch in flower pink-purple.

" 8-9 Social tall yellow flower—woolly leaves, first opens its eyes.

9 First dime daisy, the one that buds red and rises about three inches from the ground.

"First yellow lupin (over on Clark's Top). The dime daisy was by the sumach patch near Wolf Cañon.

" Oaks, the most advanced just breaking into leaf and flower. Right east of the study window was the first.

" 10 First very small yellow flower leaves at right angles in opposite pairs.

First Indian paint-brush bud——

As Mr. Lampland and I continued our walk this morning we suddenly, within a foot, came upon a huge snake which at first we doubted to be a rattler. He coiled and hissed. We killed him with stones and brought him home still moving. He measured five feet two inches and is now in a large jar, as sarcophagus, for preservation. He was, we think, a bull-snake. He was lying nearly at length on the mesa just this side of the sumach patch above Wolf Ravine.

BOSTON

This is the nearest echo of the den. I hope the newly planted flowers are up and the others upper.

A pleasing postcard signed by several French people greeted me here expressing their enjoyment in reading *Mars et ses Canaux* and looking forward to more this year.

FLAGSTAFF

April 5. Snow on the continental divide, on the ground and falling—train on time at Albuquerque, one hour late at Flag. Flag colder than I had supposed it would be.

April 6. Hyacinths just ready to welcome. Crocuses out in the plots before the dark room and the study.

San Francisco peaks covered down through the upper pastures, and the snow blowing off the peaks yesterday in fine volcano style.

The cow-calf of Venus, a dear. Another calf born on Apr. 2 to the white-faced cow, a bull-calf.

FLAGSTAFF

Lohse accepts the book, "Mars the Abode of Life"; so send him a copy with my card, also two or three copies here. He writes that he knows the Kaiser to be interested in astronomy, especially Mars, but has not heard of any decoration. The whole thing is odd, is it not?

FLAGSTAFF

Here is the Bulletin for you.

April 13. The first butterfly, a *Pieris rapae*, the imported tramp apparently, found back on the mesa (near the Amelanchier bush).

14 The first daisy, found near the cowenclosure by the barn.

16 The wood betony flowers are multiplying rapidly. Evidenced by the number I now perceive between the B. M. and the garden and near the Slipher's west, between the road and the barn.

There is still a patch of snow on the N. E. slopes of Arrowhead Hill (where the first arrowhead was found by W. L. L. the great arrowhead discoverer). Of course, there are the snow fields N. of the B. M. The snow is beginning to show patchy on the open flanks of the mountain, where we all lunched once.

Up to today it was one continuous sheet there. In spite of this arctic description it is all like summer, 65° F., warm and balmy—around the Observatory.

I flushed a jack-rabbit yesterday on my way after the cows, just to the west of the bin in the "Forest Reserve." It was good to see his great ears and great action.

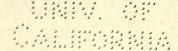
LOWELL OBSERVATORY.

FLAGSTAFF, A.T. DEC. 26. 1913

Dies Mis Leonard:
Mis Williams:
Mr. O'Connor.,
Mr. Lake.:
Mr. Jucker:
Mr. Jucker:
Mr. Langley:
Mr. Langley:
Mr. Langley:
Mr. Edwards:

your brantifully conceived thought of one touched me greatly. Nothing could have pleased, me were there that Semidial clothed with mortian cloak, lymbolic of when the limit always advises. It shall be inscribed, with all your coames and ask up on the top of Maro' thill and when one find I that too shall ost its leotimony. Thank you all most feeling,

Tercial Lovell





LOWELL OBSERVATORY FLAGSTAFF

Today I plant the second half of your row of sweet peas. The peas are soaking now. The woodbetony is conspicuous. But it affections only the neighborhood of the B. M. and of Mr. Slipher's. Nice Betony!

The radishes and lettuce have been up some days in the frames and so have the zinnias. I am now covering the frames with gunny sacks, as I find and remember that the sun burns them up.

April 18. There is a conjunction of Venus and Mercury tomorrow which we hope to witness. We have made some observations of Mars which show chiefly the bright regions near the equator out in full form, Aeria, near the Trivium and so forth —Jupiter is being photographed, and I have this morning been measuring on my enlargements the portions of the belts.

FLAGSTAFF

We had some excellent views of the planet this morning, and the canal development is progressing just as predicted, the canals in the Mare Sirenum having started first, being already dark and salient. Vive la prediction.

FLAGSTAFF

April 21st. Wild carrot flower found. This makes four now:

Snow-flower
Wood-betony
Daisy
Wild-carrot

Wood-betony now quite profuse, and snow-flower not rare, showing that what I first found of it was not the end but nearer the beginning.

Leave on No. 7 tomorrow, or Wednesday, arriving at Santa Barbara the next day. I want to hear Agassiz's lecture on the Solar System, which takes place on the 30th, and during the performance of which he threatens to chain me in the cellar.

FLAGSTAFF

Gloomy days terrestrially though astronomically fine. Mars is fulfilling all prophecies.

FLAGSTAFF

I know you like a perfect postcard so I shall give this one a travelling jacket.

Just back from the Agassiz's at Santa Barbara. Very successful trip. A.'s most kind; conductor and brakeman on No. 7 and No. 2 (same men) quite chummy. Learnt a lot in consequence.

Persuaded A.'s to change route and return via Santa Fe R. R. for three days visit here. Then I go East with them on the 15th—7 A. M.

Met Ripley at lunch; he wanted me to go on an expedition over new line from Prescott to Colorado River below Needles, with him.

Mail sent on 16th from Boston to Auditorium Annex, Chicago, will reach me. Till 10th here. Your sweet peas up.

FLAGSTAFF

Flower Chronicle

May 3. First clover; the three-leaved kind—blossom pinkish white, leaf with oblong light marking—near base.

April 27-May 3. Some time between these dates while I was in California, your first row of sweet peas came up.

May 4. Afternoon second row sweet peas piercing through—see plan.

Went out yesterday afternoon to Indian Paintbrush Ridge (overlooking plain west of saw-mill; not the yellow paint-brush ridge north). Looking for the first paint-brushes, but found none in bloom.

Saw one on April 27 near Crookton just this side of Seligman.

The second instalment of gladioli has duly arrived and I shall plant them, I think, today.

The hollyhocks are spreading all over the front of the B. M. and the alfalfa, ditto, where it can.



WITH HIS JAPANESE IRIS
In the Arizona Desert

FLAGSTAFF

Chronicle of *really* important events in the life of the Observatory.

- May 7 Your peas have hasted to be above ground in order to welcome you to the extent of 99 in row 1, 32 in row 2.
 - " "Populus tremuloides just breaking into leaf in holly cañon—The two kinds of dandelion, the solitary and the social, about to flower. (I think this is what I irreverently called "Spurge" the other day.)

Ripley asked me to inspect the new line from Prescott west to Parker with him this week. He appreciated my stories. But I returned a pleased negative.

The Agassizs are due here Wednesday night to stop till Saturday morning when we hie east together.

LINCOLN, NEB.

Warm sun-flooded afternoon in which I have been wandering amid the fossil bones of the past with Prof. Barbour and Prof. Sweeney, the astronomer here.

LONDON

Great success so far. Sir William a dear! Have spoken already at the B. A. A. and asked by Sir David Gill the Pres. to speak at the R. A. S. Invited to Germany to speak at Treptow close to Berlin through Lohse. More anon.

FLAGSTAFF

Here.—Nine shooting stars to greet me.

TERRITET

Dodged over to lunch in Italy. Wonder what they do on Mars!

FLAGSTAFF

The crosses represent the points reached in our ascent of the Peaks yesterday, the most perfect day imaginable. Fremont was my objective point; Dr. Slipher wished to leave a maximum and a minimum thermometer on Agassiz, which he did. Fremont was cozily hospitable as a Pieris occidentalis, and I both found. We had quite an interchange of views, both inspecting the other. On the E. (crater) slope of Agassiz I found Juniper communis. Thus I was doubly rewarded.

FLAGSTAFF

I meant to have given you a picture on a postal of our expedition up the Peaks on Sept. 28—Saddle, Fremont, Agassiz. It shall be noted in a postcard of the range.

Today there is the first snow on them after the storm last night; a powder near their tops. Below they are gorgeously belted with aspen, orange and gold.

FLAGSTAFF

I have nothing heavenly as yet to add. We are waiting for the moon to pass, to take pictures. Those already got have disclosed asteroids and some suspicious star characters. Our Sherlock Holmes is after them.

This is to give you the very latest from the field of operations.

FLAGSTAFF

Professor Morse left yesterday. Sorry to go but nervous to get back to civilization.

Miss Mary Proctor came last night and saw Jupiter and a beautiful nebula in Virgo. She remarked on how much better Jupiter showed than at the Lick.

FLAGSTAFF

In taking out a large flat stone that used to limit the hollyhocks before their field of operations was enlarged, I discovered this morning where tarantulas go for the unaccounted-for ten months of the year. As I took it out, there, underneath, was a smallish specimen of the tribe, perhaps three-quarters the size of the usual September individual. So they hibernate during the greater part of the year.

Today is the first decent day we have had. The wind up to now has been horrible, and colds prevalent through the community. I myself have at last succumbed. I seem now to be better.

The sweet peas planted in their usual place, are now just peeping above ground; while the vegetables:—radishes, lettuce and beets have been, ever since I came, making sparse attempt at above-ground growing. I am sitting in the library, the new room overlooking the valley, gazing upon blue sky and green forest.

So far we have found nothing except an asteroid or two and one interesting variable of which I am having prints made. I wish the planet were not so coy.

LOWELL OBSERVATORY FLAGSTAFF

Here we have had it too cold till the other day, just before the Judge appeared from Prescott where his cases fortunately melted away and he came gallumphing on here. Of course, we accompanied him to Oak Creek; and put up at Mrs. Sissons, an immense improvement over the Thomas's. I had in view my new? Juniper and this time was put by Prettyman upon the track of finding another tree whose grandchild turned out to be buried. So now I have what Prof. Sargent wanted. The next day I went on horseback with a new squatter way down the creek to beyond where he was preempting at what is called the Great Falls. A fine ride it was, out of the world and his stories peopled the neighborhood with animals one longs to meet and never sees. The nearest we got to one was the trail of a rattler,—but though we beat the brush no rattler himself appeared. I was, however, able to identify a tree which both he and Prettyman had been anxious to know about, the only specimen in the neighborhood. The stranger turned out to be the Hop-Hornbeam. Frank, my friend, had described it as resembling an elm, which, as you know, is the common apprehension.

FLAGSTAFF

Please send here three copies of Mars as the Abode of Life—It is good to have such here.

The heat has come at last but duly tempered to celestial spaces.

Judge Doe has just gone back to Prescott for ten days. Yesterday he and I went as far as the confines of the craters toward the Little Colorado in an automobile.

The garden is doing fairly well. Some things—peas and pumpkins—excellent. Some nasturiums.

LOWELL OBSERVATORY

FLAGSTAFF

Thank you for that amusing clipping. They hit the astronomical observations better than they wot, for yesterday morning Mr. Slipher did get a photograph of Saturn and Mars in the same field, a very pretty one.

So the conjunction was immortalized all right.

The nasturiums in one of the flower troughs are fine, those in the garden not so good. The sweet peas seem to have grown tired, but the zinnias are a joy. They fill the farther hot-house bed and are a parterre of color. The hollyhocks are monstrous, 7½ feet tall, like grenadiers in front of the window and fringe most of the house.

FLAGSTAFF

The sweet peas are recovering. Pumpkins measured daily. Gourds setting. Hollyhocks immense.

The Judge, Mr. Slipher and I go on an automobile trip to the White Mountains at the end of this week. The machine is the wonder of the town.

LOWELL OBSERVATORY

FLAGSTAFF

Sudden resolution—asked to attend Republican territorial conference at Phœnix on the 20th. Have decided to go and am leaving on No. 7 this morning. Shall not be back before Thursday night.

It is the general meeting to decide on Candidates for the election in December.—Dislike the journey but feel it wise to be there.

The rainy season has not yet given over. We had rain last night and showers this morning just after observing and the peaks at this moment have their nightcap of cloud drawn way down over their ears.

The garden is still fine and I only hope the frost will forget to come.

LOWELL OBSERVATORY

FLAGSTAFF

You are missing nothing by not coming. We had a killing frost on the night of the 2nd and in consequence the garden largely is not, and the aspen on the mountain which had begun to turn beautifully have gone into drab. A pretty poor Providence. That you may feel here, nevertheless, I send some selected photographs.

LOWELL OBSERVATORY

FLAGSTAFF

Here are some portraits of the planet taken Oct. 11.

Look at the Fons Juventæ and the Chrysas connecting it with Mæisia Silva! The planet wants you to be kept *au courant*.

The oaks are now beautiful in gold and russet and red.

LOWELL OBSERVATORY FLAGSTAFF

Poor Dr. Slipher this morning! He is now living in the violet room and as you know the photographic basement trap-door opens just outside it. This he had shut himself on going to bed having found it open. On getting up for Mars at 4:45 he opened his door and stepped right down into the abyss, Mr. L. having opened the door in the meantime and forgotten to close it. He had an awful fall and for two hours was in agony. He is now better and is sitting in the new library, opposite me, before the fire. Severe bruises, I believe, are all, fortunately.

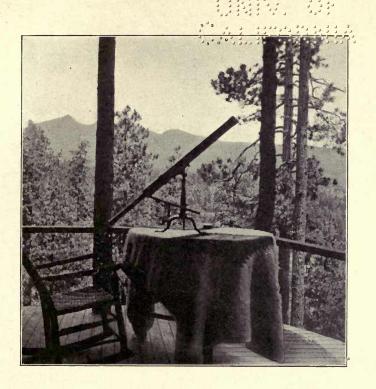
LOWELL OBSERVATORY FLAGSTAFF

After a spell of ten days of impossibility of observation, Mr. E. C. Slipher and I began again last night and finding the seeing not so good as we had expected went to bed to rise again early this morning. He is now developing one of the photographs we took this A. M. The canals are ever so much more evident than they were last opposition. Soon I shall send you prints of drawings and photographs.

Plate has just been developed; canals show fairly well about the eye of Mars.

MARS' HILL

Just back from my excursion to Kingman—The Judge says it was a great success. And I suppose a judge should know. Certainly I made some friends; even among the Socialist miners which was my aim. One of them whose views were quite subversive, now loves me—to my immense surprise. He is a mighty hunter before daybreak and after. -You thought I was going to say "before the Lord" but I avoid commonplaces as all hunters should do.—I read ancient history but I shot quail -all I could, which was not many. Quail we all learned, even the mighty hunter, are dishearteningly scarce this year. I hunted men with more success. You should have had a bird's-eve view of both. First the spacious desert trod by a man and a gun all day past cacti and palochristi trees and then the same man minus the gun treading the boards of the Elks Hall by night. One of the miners afterward came up and expressed his interest in the astronomical part of the lecture and then added with gusto, "And I like your politics too!" I had shown how the solidarity of the Martian canal system points to an efficient government in which the best men are at the front and then I went on to show its applicability to us.



LOWELL OBSERVATORY FLAGSTAFF

We were up all night last night with Mars. Among other things we took six plates of the planet showing that morning frost is nearly half way round the longitudes. The fact that it was always there on the sunrise limb and never entered far on to the disc proves conclusively that it was morning frost that melted as the day advanced. It was perfectly white and more salient than the south polar cap.

I shall shortly send you an enlargement of our last night's work.

LOWELL OBSERVATORY
FLAGSTAFF

Here is the anon.

The first frost observations have gone like wildfire over the country. Not only the N. Y. Times but the Albuquerque Republican have had editorials on the subject and very nice ones too. And this morning comes a telegram from the Associated Press asking for additional details. It is amusing to see what takes. Today, if possible, I shall send an enlargement of one of our original negatives showing this same frost. The frost quite threw into the shade the little south polar cap. There are some very interesting points about this apparition which I am now working up and from which I desist simply to write to you. The first frost does not appear in the neighborhood of the Cap but way down in latitude 59° and the interesting thing is that this is exactly where the loss by night from the warmth received by day on a nearly airless planet comes out at its least residual, i. e., here it should be coldest at sunrise. It is curious, is it not, that the morning autumnal frost should be not at the pole but way down in almost temperate latitudes? Yet such follows from theory and as you now see is confirmed by observation.

On the 14th we sat up observing and recuperating till 6 A. M. It was the only good night we have had for some time and we made the most of it. I was pretty well used up the next day. We

took several consecutive plates, as I think I wrote you, the frost coming out saliently on all.

I wonder how the new "Soul of the Far East" is getting on and out in its new autumn jacket.

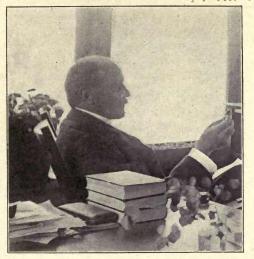
If you are suffering from a blizzard corporeally, we too have felt it celestially. The weather really ought to be better attended to. Tell Mr. A. L. Rotch.

MARS' HILL

I told you, did I not, that I flushed high upon a ridge in the White Mts. (ours, the Arizonian) seven enormous grouse that I took to be wild turkeys? The only life I saw there though I came across bear tracks, I think; and a mountain lion came and looked at our camp, as his foot writing revealed the next morning.

Mars is all right, but, between us and him, has been atrocious. He is sending you by this mail the portraits he promised you showing him in his newly donned ermine.

Look 30° to the right of the tiny south polar cap and you will see the new frost and by comparing the two plates sent you of longitudes 40° apart you will see the white never entered detached on the disk proving that it melted as the sun rose.



LOWELL OBSERVATORY

FLAGSTAFF

The opposition last night celebrated itself by giving us unfocusable images, they were so bad.

MARS' HILL

The most beautiful Christmas decorations I have ever seen. The wreath, a Martian one, is gorgeous and the star-lantern-house sans pareil.

Thank you for the Christmas card that came by itself. And as for the one you enclosed for Mr. S. it was so lovely that it now adorns my bureau. Conversion this is called, not theft.

All brightness for the New Year.

LOWELL OBSERVATORY

FLAGSTAFF

Here are our first results. The Canals, you will perceive, are much more salient than they were in 1909—as I expected.

The car arrived yesterday afternoon and on the hill this morning. Amazing swift transit smashing the records.

Regular thunderstorm on at this moment.

The Barrett Wendells came on Monday and left on Wednesday, he having seen the Canals.

MARS' HILL

You got my telegram on Saturday night about the old-new South sent to keep you au courant with things Martian.

AT SEA

This is the way we expected to look tomorrow morning at 9 A. M., at which hour we are now told to look forward not back.

HOTEL DE LA METROPOLE MONTPELLIER

Just a word to say hot enough for the enclosed. Also please send "Mars as the Abode of Life" and "The Evolution of Worlds" with my card to:

M. le Professor Moye
3 Rue Achille-Bégé
Montpellier
He'rault
France

The latter he has asked to translate. Or rather he asked to translate another and I chose the last.

Am off for an automobile afternoon with the President of the Astronomical Society here.

HOTEL MIRABEAU, PARIS

What a nice "bufday" note that was! It gave me pleasure at the occasion and tempered the regret with which I passed another milestone. And how nice I thought that lunch, almost as much as Prof. M. undoubtedly did. It was a happy idea and I can see that cozy, withdrawn room (withdrawing room shows what has always been associated with the best) in its quiet halflight, so near and yet so far from the turmoil of the town. From what you write me Mrs. S. must be an eminently intelligent woman which still further pedestals the lunch.

After arriving at Monaco on the 16th, we went to stay at the Villa Sylvia (the Ralph Curtis's) until Monday, the 25th. Then to Avignon, Arles, Nîmes and Montpellier where M. Moye awaited us. The next day he brought round the president of the local Astronomical Society who did everything you can conceive of and more, beginning with an automobile trip that afternoon, an introduction to the Manager of his Automobile Club and the hiring thus of a car under the best auspices for my tour through the Cévennes and ending with a grand lunch the next day at his château after miles out of town. And on my arrival here, behold a case of wine to greet me! Really on me pourait mieux. Hospitality becomes a weak word in comparison. M. Moye also, indeed first, was most welcoming. He is Professor of Law in the University and a man very highly thought of.

HOTEL MIRABEAU

8 RUE DE LA PAIX, PARIS

I got this notice at the after-tenth hour last night; jumped into a taxi; was whizzed there; entered by the corridor.

Flammarion was notified; escorted by him to the centre, of the platform; assembly informed; greeted; answered with the discovery of Uranus rotation period, showed Saturn photographed as desired though only a positive, etc.





HOTEL MIRABEAU 8 RUE DE LA PAIX, PARIS

In view of the "Titanic" disaster I cannot be sure that all my letters or other mail has reached America. In consequence it would be well to find out if Senator Crane received an answer to his last letter to me which I despatched to you in which he notified me that the Chief Forester had said I could use dead pine and cut live oaks for fencing the section west at Flagstaff and asked if that would be satisfactory. To which I replied that it would not; that I should not cut live oak willingly; that what I wished to cut were young pine, under eight inches in diameter and that I probably had a legal right so to do anyway. Of course if you got my letter he got mine too. Otherwise please find out.

Many pleasant dinners and lunches the past two weeks; a dinner at Flammarion's, one at Baillaud's, the director of the Paris Observatory; a lunch at M. Boutroux, the director of the Fondation Thiers (he was the French lecturer at Harvard a year or so ago), a talk before the Bureau des Longitudes, observation of the eclipse with de La Baume-Pluvinel at St. Germain, where I met among others Cowell of the British Nautical Almanac and Turner on the way out, who asked me to dine with him that evening but I regretted. Of the séance of the Astronomical Society—I wrote you before.

PRINCES' HOTEL
ST. JAMES, LONDON, S. W.

Now you may stop my mail.

Meanwhile a round of scientific social gaieties. Tomorrow, Tuesday, dinner and spending of the night at Wycombe Court with the Worthingtons. Wednesday, dinner with Prof. Boys, and the President and selected members of the Royal Society at the New Automobile Club considered at the moment the last touch in munificence. to the soirée of the Royal Society where the Lowell Oby.'s latest results are to be exhibited. Friday tea and meeting of the Royal Astronomical Society where the President (Dyson) now Astronomer Royal wants me to talk. Afterwards to the R. A. S. Club's-sanctum sanctorum, a sort of culled élite of the Society-dinner as the President's (Glaisher) guest; and so forth and so on. They are surprisingly attentive.

Shaw, head of England's meteorologic service, at least he was two years ago and I suppose still is, with whom we lunch on Friday, feels Lawrence Rotch's death keenly. It was so unnecessary, his death.

Considering that I came to England for my clothes you will be astounded to learn that the very morning I arrived at my tailor's, his tailors went on a strike and are at this moment parading London. My cutter is going to baste my coats himself, very kindly, but when I shall get them I do not know,—such is modern life.

PRINCES' HOTEL

ST. JAMES, LONDON, S. W.

The crowded astronomical work is now over and I rest with content. The dinner of Prof. Boys at the new Automobile Club was small and select.—We sat in the following order

Prof. Boys

Sir Archibald Geikie Lord Rayleigh

Percival Lowell Parsons

Sir David Gill Sir William Ramsey

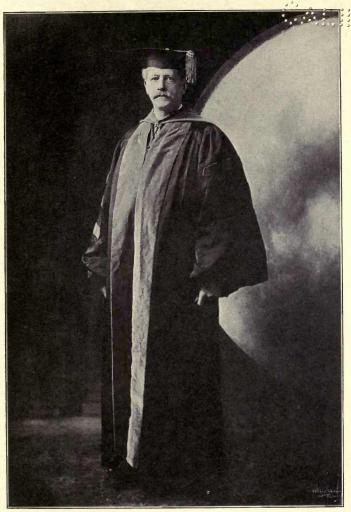
H. H. Turner Sir Oliver Lodge

Boys' son

Then on to the soirée of the Royal Society where the Lowell Ob'y, photographs and drawings were exhibited. They occasioned great interest and were the most crowded of all the scientific shows. Worthington was there and did his part well. The younger the examiners the more they saw. The Uranus rotation everyone could perceive. Several other exhibits were striking, especially the shooting out of the x-rays of radium, visible as they condensed the moisture in the air of their cell.

On Friday the day began with a lunch by Dr. Shaw, the head of the meteorological service of Great Britain. There were six of us, Sir Norman and Lady Lockyer being the other two. Then to the tea of the Royal Astronomical Society, and the meeting afterwards, at which I spoke. Then to the R. A. S. Club dinner at which they did me the honor to make me the chief guest. They were all very complimentary and attentive, with constant

reference in the several after dinner speeches. Sir David is particularly affectionate which however is his wont. We ended the evening by walking home together. Tonight we dine with Sir Norman and Lady Lockyer and tomorrow go to the good Townshends at Oxford.



PRINCES' HOTEL

ST. JAMES, LONDON, S. W.

You did cleverly to find out about Sakura no Saka. It might mean "The Hill of the Cherrytree," the position of words in a Japanese sentence being the opposite of ours. What I meant by it I cannot now recall.

The tailor strike is ending so I have hopes of getting my clothes and convoying them with me in bond to Boston. One overcoat I actually wore today. It is handsomely lined in green! Servants are secured. May they remain secured and satisfactory.

BOSTON

The Xacting planet is exacting enough in all conscience but so it ought to be as you see by the above.

I am off shortly for another week-end which as you say are nice and fresh airy.

MALVERN HOTEL
BAR HARBOR

Bouncing Bets all along the garden side—not semi-wild but of these days and tame. Thought you would like to know. Also, *mirabile dictu*, blue sky but pale.

LOWELL OBSERVATORY

Monday I took a walk on the mesa, toward the dump and back by the road-runner thicket (where the bird was found by me; we found only his trail afterward you remember). The snow I measured, 25 inches deep in the drifts between the trees. But not a spoor of anything but one squirrel.

Yesterday I went southwestward to the new fence, a fine substantial structure and on the hither side of Wolf Cañon on the flat this side of the sumachs I found the first flower, a little white thing of four petals amid lobelike purple leaves. You will probably recall the name. It was growing in the soggy marsh ground left by the melting snow.

Today a regular old-fashioned snow-storm coverliding plants, trees and everything. The bulbs in front of the dining-room were just beginning to spike up yesterday. Now they will have to await another resurrection.

DEEP COVE

INDIAN POINT, MAINE

This is first to thank you for your note and second to welcome you back.

Sea-urchins abound here and flounders may be seen on the bottom in shoal water at low tide.

I am in the nicest little bungalow, made of portable houses—a bedroom and a sitting room each 10 ft. by 12.5 with an outside porch verandah. The sides of the sitting room are all patent windows which hoist up or down most ingeniously. The front the same with a window-door, the back alone a wall and with another door. The bedroom equally perfect. Mine is encased in mosquito netting at all the windows so that the breeze enters but not the flies. Ideal!

DEEP COVE

INDIAN POINT, MAINE

I am glad you stayed on. I have just taken the picture of my bungalow which you shall have when it is grown up, i. e., developed.

Forty seals barking on a reef and plunging into the water when we turned the corner interrupting their sea party! How is that?

DEEP COVE
INDIAN POINT, MAINE

Welcome to Maine!

I hope the journey up was not oppressively hot. You are just in time for the blueberries; and cool nights. It was 57° F. last evening when I reached my bungalow sitting room after dinner and I spent the evening in my overcoat.

LOWELL OBSERVATORY FLAGSTAFF

That was a nice note of Sunday last. Now what you want is news from here. The skeletons of our recent successes vou have been sent at once: first the determining of the previousness of the Fastigium Aryan showing the ephemeris wrong (called away here to see Venus) then the detection of the rotation periods of Tethys and Dione; lastly what I arranged for and hoped I might succeed in but doubted. You will remember our letters and telegrams out here—seeing the Canals with the full aperture of the 40 in. The latter was difficult but —there they were by diligent looking. You shall have prints of both my and Mr. E. C. S.'s drawings. This was the night before Professor Willson arrived, since then no seeing to speak of and a great snow storm.—Nevertheless he has seen many Canals ill and one Canal well. He feels he is getting on. He always believed but is now seeing for himself. The blue belt about the shrinking cap was one thing he particularly wished to see and that he has seen. He has been exorcising the imps who make bad seeing and is happy and calm.

LOWELL OBSERVATORY FLAGSTAFF

Bravo! for what you wrote of your astronomical evening at the H. U. Ast. Laboratory! You are a true Martian and one to be proud of. Meanwhile the Director of the above-mentioned laboratory has been having the time of his life thanks to his own good expert eyesight. His strides in detection have beaten all records—blue water round the melting cap, canals seen better and better each night until finally doubles and straight narrow lines. After giving him a long wait nature relented, showing him first a projection, a rare event and then last night seeing 8-9, in which E. C. Slipher discovered a new division in Saturn's ring B near the Crape ring which he, Prof. Willson, saw perfectly and finally belts and oblateness of Neptune, the latter of which I suspected Jan. 19. Truly his visit came to an end in a blaze of glory which he greatly appreciated. He burst out in the den with "This is the happiest moment of my life."

Telegrams go to you of all these finds or have gone. Neptune yet needs confirmation which I may attempt tonight.

LOWELL OBSERVATORY
FLAGSTAFF

Great pleasure your two letters just received have given me: one with just the news I wanted and the other with that gorgeously attired "jack." I was delighted by the one and touched by the other.

Prof. Willson is going especially in to see you, as I think I wrote you; probably he has already told

you.

As a slight return to you I enclose you pictures of snow and clouds from Mars' Hill. We are sending Prof. Very today the latest spectograms of Mars and the Moon for measurement of water-vapor and oxygen. Also I am starting Mr. Lampland on photographs of Saturn and his satellites to show to all eyes the latter's variability.

More anon.

LOWELL OBSERVATORY
FLAGSTAFF

I found the first flowers on the mesa, the little white snow-flowers, on Feb. 28 on the plateau east of Wolf Cañon, almost or rather on both sides of the spot where we found the baby jack-rabbit. It sends you its regards.

I have also found earth-stars wandering about, one of which I picked up for you. Indeed I pocketed one before for the same reason but it vanished. I knew you would like to be kept abreast of the flora.

Will you please have several more complete sets of prints made of the various globes of Mars.

Now that we have got into the planet's own month the time for leaving him draws near. However here it has been spring for some time; while in Boston it is polar. So one feels well off in being far off.

A little white bull we had here when I came, and which I sent away, was killed just under Elden Mt. on the south by mountain lions the other day.

LOWELL OBSERVATORY

FLAGSTAFF

Am bringing back many photographs of tracks; mountain lion, jack-rabbit, skunks.

PRINCES' HOTEL, LONDON

That man's interview, of which I have just seen a copy, was most reprehensible. Did he ever send the proof? If so, the "I's" should have been left out and the whole thing toned to respectability; if not he should get a wigging from his Editor for misquotation and bad taste.

We saw schools of porpoises when two hundred miles out and later, a hundred miles from Bishop's Rock ran right through the middle of a trawler's seine a mile long at least.

HOTEL CHATHAM
PARIS

Yesterday I lunched at the Flammarions with Loie Fuller. She speaks French fluently. The day was the day of Saint Médard of which an old proverb says: "S'il pleut le jour de Saint Médard Il pleuvra quarante jours plus tard."

Now it rained before and thundered during lunch and at the Eiffel Tower where Flammarion and Loie Fuller went afterwards to inspect it for a dance on the Fête du Soleil on the 22nd instant—taking me along part way with them—there broke a thundering hailstorm so that Paris was white and Flammarion wrote about it of course to the *Herald*.

Today I have been trying to get the Connaissance des Temps for 1849 with Leverrier's memoir in it and have so far failed, though I went to Gauthiers-Villars, the publishers.

HOTEL CHATHAM

PARIS

Dr. Slipher's discovery occasioning great interest and admiration. Deslandres yesterday, at a lunch he gave me, quite enthusiastically complimentary about the Lowell Ob'y. work. Cela marche, méme ca court.

Thank you I am better—and the weather has been absolutely cold; have had to sit in my parlor with my overcoat on. Hardly a too warm hour since I landed in England.

Gale, of comet fame, on his way from his native Australia, New South Wales, to London, was at Deslandres' lunch and wanted information about setting up a solar observatory.

There are fewer foreigners abroad this year than usual—another proof of hard times.

HOTEL CHATHAM

PARIS

Paris is hardly itself this year: the tourists are few; the costumes caricatures and generally hideous at that; the weather that of February. The cold I like. It is not so bad as it was. I can sit now in my parlor without an overcoat, of course with all my winter clothes on. Nevertheless last night they celebrated the Fête du Soleil on the Eiffel Tower. I went and except for the length of the festivities enjoyed the affair. Met M. Eiffel, Lallement of the Bureau des Longitudes, etc., etc. Escaped nearly dead.

On Wednesday I showed our latest results to the Bureau des Longitudes. It made "un grand effet" according to Deslandres. There were a dozen there including Baillaud, Andoyer, Darboux, Picard, Bigourdan, Ct. de La Baume, Pluvinel, the Admiral Fougaet, Deslandres and others.

This morning arrived prints of Mr. Lake's last two globes: mine and Mr. Slipher's for 1914. Of course I can only judge of their general appearance except a few things that strike me and had better be changed. Slipher's 770 is my 746; the northern parts of mine and the Syrtis Major should be a little darker. Perhaps a little different printing would bring out the proper effect.

THE PRINCES' HOTEL AND RESTAURANT JERMYN STREET, LONDON, S. W.

It is a matter of surprise to me that no copies of Dr. Slipher's article in the Scientific American nor of mine in the Astronomical Journal appear.

The prints just come of the 1914 globe of mine are on the whole very good, but in the 0° meridian one the whole top (south), i. e., the seas are too light especially the Sabæus Sinus and ditto for the 90° meridian one. Perhaps it is not in the globe but

a question of negative or printing.

During my last days in Paris I went to the Palais Royal Theatre to see "Jóse pas," a timid young man who in consequence gets into many Exceedingly funny and unnecessarily scrapes. It could easily be made less vulgar and would then delight the American stage. I hope some playwright will undertake it. I take it I told you I saw "La Belle Aventure" some weeks ago. A very pretty play where the girl elopes from marrying an uncongenial man and then from a set of chances gets into most peculiar situations, all of which is duly explained away. An old grandmother still young at heart is the occasion of much of the complication and plays very well. Here I went to see "The Marriage Market" last Wednesday and it was so dull I was glad to make my escape.

THE PRINCES' HOTEL AND RESTAURANT JERMYN STREET, LONDON, S. W.

Sir William Crookes made for me a cobalt glass screen through which grass and trees look green and wanted me to try it on Mars. I tried it anticipatorily on the dog, i.e., an ochre carpet and found that that as well turned red. So as it works the same on the just so and the not-just so, no discovery is possible. Furthermore to determine anything it would have to react on chlorophyl alone which it does not, any blue-green being grist to its mill. He is a dear soul. Next year but one he hopes to celebrate his diamond wedding.

THE PRINCES' HOTEL AND RESTAURANT JERMYN STREET, LONDON, S. W.

Your two good letters, of the 14th and the 17th have just come and the afternoon is all the brighter for them. To escape that heat is almost worth the price of a passage to this side. Your clothes paragraph struck a responsive chord for I have just succeeded, after prolonged mental agony, in getting my new ones to fit. I am now cladable in decent garments in the latest style. I am so proud of them I am afraid they will sink in mid-ocean. Speaking of which a new idea has just come to me, which I hasten to instruct you of in case anything should happen to me, which may it not! I want all my mathematical papers, including the present X investigation collected from all the periodicals, etc., and published in a volume entitled

Papers on
Celestial Mechanics
and
Celestial Physics
Vol. 1
by
P. L.

printed in large type so as to fill a fair-sized book. Voila! As you know I gave up the semi-alluring polar trip—it was too long and too touristy and crowded to suit me—and am now looking forward to a more congenial one, the trip homeward. Indeed I mean to be on the water before these lines have reached the other side. They are confided to

the same steamer that brought me over, the good if not the fastest *George Washington*. In this attribute it does not share wholly the character of its illustrious namesake as unwritten history informs us.

The season here has closed; did so about mid-July with the Eton and Harrow Cricket match and the country is now preparing for Civil War. The Asquith ministry is, I am glad to say, going to pieces. My presents are also housed practically in toto.

So you see I have not forgotten what you were thoughtful enough also to write. I hope Ritchie and Lundin will like theirs. A most amusing letter of thanks from Dr. Bigelow.

CHATHAM, MASS.

An excellent place. Went out today in a motorboat to myself and round over Nauset Beach with the boatman. Found least-tern eggs, only place where they still exist.

YORK, MAINE

A U. S. gunboat has just passed leisurely in the offing. The baby crop of browntails is just out of the egg. Found them this morning. I passed a pleasant day Thursday-Friday at the Putnam's Manchester.

BOSTON

Your telegram arrived yesterday—I am glad everything went off well including the weather. We have been having an amazing hot spell, two days of 90°.

I picked up the northern comet the other evening with the naked eye—night before last and verified it with the glass. It is brightening and moving west fast.

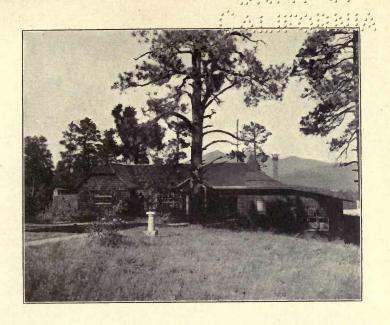
Percinal Lorell.

LOWELL OBSERVATORY

FLAGSTAFF

This follows fast after you though it will not overtake you for many days to wish you a successful journey and to say how happy and comfortable you made everything here, the good you did living after you in the guise of that superb drawing-room, so called also because it draws everyone thitherand in the relict, Sheckels, who so far runs on well.

By comparing the oak-tree in front of the B. M. with its presentments in the photographic album you so thoughtfully made, Mr. Lampland and I this morning proved that it had very surprisingly grown and we are going to re-photograph it from the same points as years ago.



OAK TREE AND ITS BIG BROTHER, THE PINE, IN FRONT OF THE B. M. ("BARONIAL MANSION")

LOWELL OBSERVATORY FLAGSTAFF

Yesterday I went on a trip to Sycamore Cañon to explore it for trees. And most successful it was. Sykes I got to go with me in his car, together with his boy, Guy. The trip was hard but this morning I seem to be all the better for it. In places the road out there was excellent, in others execrable. So that our speed varied from 0 to 25 miles an hour -It took us three hours from the electric light plant down town, where we stopped to light upour cigars—to the outer rim of the Cañon. From there we journeyed on foot about two hours down, bagging trees, through what I named Maple Cañon for the number of western maples found there—not the ash-leaved maple, though there were plenty of them but probably a new species, a point which will be decided later at the Arnold Arboretum. Also berries at last of the new species of Juniper. I found in Oak Creek but could get no berries of-And other interesting things too numerous to mention! It is a fine land for future exploration and I mean to explore it. But one must camp out to do so.

LOWELL OBSERVATORY FLAGSTAFF

One week ago today Sykes' son and I started on an exploring expedition to Sycamore Cañon, a terra incognito considered the wildest and roughest in Arizona. We left too bright and early for me, and it took us three hours to get to the outer rim of the Cañon. Thence we descended for an hour and a half. We were rewarded, not by the Cañon itself, for we only got down about half way or a thousand feet, but by what I went for, trees and shrubs. We entered by what I named Maple Creek because of the numbers of western sugar maple we found there, not large and imposing trees like our Eastern variety but pretty, snubnosed, foliaged ones. Walnuts were there and great alders a hundred feet high; the flora resembling that of Oak Creek only more so. By the time we had reached what we deemed must be our *Ultima Thule* we suddenly came upon a deserted log cabin beside a spray of clear water and what especially delighted me, one of the new Juniper I had particularly sought, and with fruit! Prof. Sargent had enjoined me to find such. The tree was the one I discovered in Oak Creek but that was fruitless. The spot was also a walnut grove but the nuts resembled pig nuts rather than the nut of Jove (Juglans). After eating a frugal lunch we toiled back. should have said that our introduction to the strange flora came in the guise of a J. pachyphlora (you re-

call the noble one at the head of the little amphitheatre) but with enormous fruit, the berries reaching 15mm. in diameter. Think how a tree laden with them would look in Boston in a park.

LOWELL OBSERVATORY

FLAGSTAFF

Thank you for the photographs. They are capital!

I gave Sheckels his at once and he was tickled with it and was going to mount it immediately. One you took of him—near the cedars—is excellent and very flattering.

I leave here on the morning of the 12th.

We have been making some good observations and measures of Uranus. His oblateness is most manifest. Did I tell you that Prof. Fox has written me expressing his delight at his visit and asking me to entertain his University Club on Saturday night the 14th Nov.? I have accepted and shall leave Chicago Sunday, arriving in New York Monday morning and probably Tuesday at 6 P. M. reach Boston.

Mr. Gill who left here Thursday expressed a wish to be present, at which I was pleased.

MARS' HILL

Oh! I am sorry about the eye and more than glad that the pin missed the mark. "Pins may have saved the lives of a great many people by not swallowing them" but they are dangerous things for all that.

Shortly I hope to send you more of Mars' pictures. We have had the worst season I have ever known, not one first-class day so far and only one or two second-class ones. East winds on end. What folks characterize as beautiful weather and worse than a storm for sight.

I hope Thanksgiving in the far woods was ideal. Here there has been no snow as yet. Even the peaks which some three weeks ago took on a lacelike mantle have allowed almost all of it to fret away. We had a cold snap due to a mighty wind —from the east of course, we know no others—and the water-pipes froze, the man not having kept a proper fire.

I am writing from the new library where I have been making my seat this year. But it is sometimes cold.

LOWELL OBSERVATORY
FLAGSTAFF

A letter came just (Sat.) now from Professor Chant who was so pleased with the Saturn's Rings Memoir that he wanted an article on it for the Journal of the R. A. S. of Canada—Eheu! Also several nice letters about it from other people.

LOWELL OBSERVATORY

FLAGSTAFF

You were here at just the right season. You could not walk abroad now or go anywhere; snow 3 feet 2 inches on the level! The whole plateau is eiderdowned while the sky is an intense sapphire.

—This morning I found and photographed the tracks of jack-rabbit and coyote. Also took pictures of Curtis on his skis. Curtis informs me that a Belgian rabbit had escaped from mill town and he thought some of the tracks were that animal's.

The deep blue sky almost as sparkling as the snow gives one the feeling of being exposed to outer space. A most singular method of clearing occurred last night. After 12 inches of snow had fallen the sky made show of opening up, then hesitated and finally after sundown began slowly to emerge to the northeast between Elden and the Peaks and so roll back the clouds to the S. W. During which a surface west wind blew. The Zodiacal Light was conspicuous and the stars very brilliant though really blurred.

MARS' HILL

It does one good to hear pleasant things. It is like a ray of sunshine on a stormy day. So I must needs forsooth sit right down and thank you. The rest of the letter was also good to read. The same mail brought a request from the far-off Philippines for Macmillan's latest books on Mars, etc.—from a friend of my friend Mason of Yokohama who had piloted him in astronomy. It is good to mark the spread of knowledge like the ripples from a stone thrown upon the water, voyaging ever.

We have just sent you a big storm—I have marked its progress right across the continent. It gave us a foot of snow—on top of thirty inches already. I hope it wasn't too disagreeable. We are now enjoying (?) another and sat up some time last evening with a temporary convalescing sky to some slight profit.

A jack-rabbit now inhabits the Observatory grounds. I have twice flushed him from his precious night's couch in the hollow under the crest that overlooks the mill; and twice failed in snapshotting him with my camera. Coyote tracks are in evidence everywhere but I have not seen the beasts in the flesh.

Our Saturn studies progress; we have missed but one night since I arrived, though two of the others have not been much. Curtis snow-shoes everywhere and I enclose a shot I took of him measuring the depth of the snow just under the west hill where you found one of your arrowheads.

MARS' HILL

Two pictures go in this: one of Curtis on his skis, the other of the home of a jack-rabbit we are getting to know quite well. He nipped off the lower buds of some of the fruit trees of Dr. Slipher's, the naughty one, and I have twice seen him. He lives over near the south ridge. I have an uncomfortable feeling that I wrote this and sent you his picture before. No matter. Give the second to whoever likes it. Ditto Curtis.

Today was to be despatched a series of Halley's comet which it will please you to look at; also some Saturns.

This season has beaten all others here for snow.

MARS' HILL

Now here is a little surprise for you. Yesterday I sallied forth on to the mesa, hunting, with my camera. When I reached the likely place for Mr. Jack I got everything ready to snap at once. Following some of his recent tracks I had got to the bluff by the old dead log overlooking the Normal School and was standing there when, I suppose the motion caught my eye and I was aware of a rabbit just issued from behind and below a rock where, as it evidently appeared, he must have spent the night. I snapped and on the click he started down hill revealing himself a cottontail! Behold him!

MARS' HILL

Admirable program, that, for the exhibition, which your letter well outlines!

Snow, snow! You never saw anything like it. Mr. Lampland thinks we must have slipped our latitude and I am sure the Pole has moved. A blinding blizzard this morning almost worthy of Dakota.

Yesterday Mr. E. C. Slipher and Mr. Gill ascended the Peaks as far as the edge of the Alp on skis. Mr. Slipher reported the snow on it as at least seven feet deep. His ski pole would not touch bottom. He saw a cottontail just below the opening, the highest point yet for a cottontail.

On their way out in the morning they flushed a jack-rabbit just this side of the 40 inch. Moi aussi in the middle of the day started one by the bend of Wolf Cañon. I had just crossed over the ravine from the lynx hole and was standing looking round, considering the spot as probably untenanted of jacks when suddenly from the very nearest pine not fifteen feet from me up jumped a jack which I could have seen perfectly had I only looked. I snapped him as he ran and am now going to see if I have him on the film. That is the way to find them. Walk through little pines and stop every now and then. It is only when you stop that they start.

LOWELL OBSERVATORY

FLAGSTAFF

It arrived bearing its fill of good wishes and what an imposing box it was, and how beautiful within with its bark and blue bows. Two houses in fact! What munificence! Nothing could have been more appropriate; for my birthday practically begins the spring and the birds return. Thank you all so much. They, the houses, shall be set up forthwith. Where? that is the question. When placed they shall be photographed and you all be sent a copy. With my appreciative thanks to each member of the quartette I am——

MARS' HILL

The snow is going; going fast. One can now walk in oases of ground with portages between. It silently sublimates chiefly; though there are also rivulets here and there.

The houses for the birds were duly put up this morning and are now to let. We allowed the beautiful blue bow on the little one to remain fluttering to advertise that desirable property to prospecting tenants. When these arrive I shall notify you again. Meanwhile, as the real estate broker, allow me to present to the kind givers my appreciation of these excellent family residences.

MARS' HILL

A perfect galaxy of delight welcomed me in the mail yesterday noon,—the young men bring the mail up after their midday meal. I know not whether it is their breakfast or dinner—and by the time they get back here again it is noon only by courtesy, being between two and three. In this galaxy shone forth a letter and a fat bunch of clippings. So I seem to have sold into the coming society set so to speak, and shall have a welcome pass to the stage entrance of the finest theatre in Boston! Well! Well! I wonder who financed the enterprise, but I congratulate her and it. Thank you for thus making me at home in Boston while at home out here.

It is really spring.—What is more, I do not remember ever having noticed the birds here so much before. The twittering and calls of the robins in the heavy air resurrect the springs of long ago, a thing unparalleled in this seasonless land. It is very lovely in the twilight while I wait outside the dome for Mr. Slipher to finish measuring his set.

Not only for the clippings,—a good one that from the *Herald*. My friends the *Times* apparently haven't yet got round. They had an editorial the other day on our latest Saturnian find; but also for the books, another star to the galaxy, am I beholden.

MARS' HILL

Wood-betony in flower now all over the place. And the house bulbs are in fine show. Lots of sunflowers in the plain at the bottom of Clark's Gulf, northeast of the house. Snow only in the most sheltered retreats faint and few.

Even the Alp on the peaks is now only patched with what was seven feet deep on the level.

LOWELL OBSERVATORY

FLAGSTAFF

Please send us the best and biggest pumpkin seed and seeds of the weirdest and most extraordinary gourds you can. The crop thanks you in advance—

LOWELL OBSERVATORY

FLAGSTAFF

We all think the type and printing of the memoir beautiful. It has such a large minded and open face, and the several points are so well made by line isolation.—I shall return one copy when I have given it sufficient mulling.

Today I went out to ascertain whether my oak on the mesa's edge westward, was yet in flower. It was not and was a little behind the other oaks in the swelling of its buds. On the way I studied the butterflies. The Colias eurytheme, Ariadne and Keewaydin, were everywhere. I never saw such numbers of them before—Ariadne and Keewaydin are the winter forms of the species Eurytheme. Then there were the little Euchlöe sara and the tame Hesperia xanthus, beautifully mottled in black and white. Daisies studded the ground about me as I studied their visitors. The paint-brush leaves are up but no brushes as vet. The season is very backward although the last three days here have been typical Arizona summer ones, and everything now should come on apace unless we have a setback.

The Sigillum, a capital idea, is now under universal consideration—and in process of complete evolution.

The exodus eastward will probably occur on the 25th inst. or possibly the 27th.

LOWELL OBSERVATORY FLAGSTAFF

Yesterday there turned up an elderly gentleman from Milwaukee who was greatly interested in the work here. I did not see him myself but Mr. E. C. S. described his enthusiasm in glowing terms. He wanted a collection of the work for a museum in Milwaukee of which he is trustee, or something. He knew Bessel, etc., years ago. He came back in the evening, not having had enough in the afternoon, and went wild with delight when he found he could see the canals in the Mars photographs. He said he would come down from Milwaukee to see us if we would let him know when we were in Chicago.

A bevy of girls I saw round the sundial while I was breakfasting; from the Normal School, I think, and one of them was an Indian lass. Just saw a lot more—You see what a lodestar it is!

LOWELL OBSERVATORY

FLAGSTAFF

Today I have been delivering an address of welcome to the Good Roads Association which was well received. Several people kindly spoke of it afterward. Tomorrow Judge Doe and I go picnicking northeast of the Peaks.

The season is later this year. One year ago tonight the Professor and I arrived from the Petrified Forest, and the color was all gone from the Peaks; now they are still a blaze of glory.

I am just back from motoring in the red car to beyond Dead Man's Flat, north of the Peaks in quest of Junipers. Mr. Lampland drove. Mrs. Lampland sat beside him, with Judge Doe and me behind. Except that it was blowing up for a storm and that the wind, going out, raised clouds of dust and, coming back, was a small hurricane, all went well. I found what Professor Sargent wanted of me, to wit, whether the color of the berries of J. monosperma was variously both red and blue or not. They are both. Also, I learnt other details of this tree. The Judge went armed to the teeth with both a rifle and a shotgun but though we saw rabbits, both cottontails and jack, he never got near enough for a shot. The painted desert glowed opalescent in the distance.

The banquet of the board of trade of Flagstaff to the Good Road Assn. last evening was very suc-

cessful and the food surprisingly good at the Commercial.

The aspen on the south and north sides of the mountain still golden in patches.

LOWELL OBSERVATORY
FLAGSTAFF

Thank you for your letter just come and for the sympathy in it if "it is." The news came to us in a day's ago wire from the N. Y. T. to know if we had heard of the new comet discovered by Sola. That it was a planet we had no inkling till I opened your letter. So far the news is so vague that we have no hint where to look for it. Pisces is large. If Sola is right in saying, or being quoted as saying, that it has a rapid retrograde motion, it cannot be a far planet.

On Wednesday last Mr. Lampland and I went in the red car juniper hunting with success and pleasure. We started down the old Cosnino road, to the edge of Turkey Hill's mesa and thence to Winona and beyond. The berries in the latter spot on J. utahensis were something to make one stare. They covered the branches in solid masses, outdoing grapes by 100%. I never saw such fruit profusion. When the prints of my photographs dry you shall have a faint idea of what we saw.

We also bagged a J. megalocarpa berry 16 mm. across (1 inch=25.4 mm.). Judge Doe meanwhile was speeding in his car and trailer Kirkland wise to bag quail.

Today quite a snow-storm on the Peaks, practically the first. It is a late and warm season, for, five years ago on Oct. 12 when I ascended the

Peaks and down on the other side, I glissaded there 60 ft. at a stride.

Now last Sunday there was no snow on the North slope and of course none toward us.

LOWELL OBSERVATORY

FLAGSTAFF

One tree is certainly unknown, at least in America—a tree cistus. Like the ones on the mesa but 20 ft. high and 40 inches around.

Thank you for your news of the "Soul" and for sending me the enclosed. Such things do one good.

CONGRESS HOTEL

CHICAGO, ILL.

In Chicago, not ill. Found a letter awaiting me from Fox, in which he says: "I have been very much interested in your proposal to found a medal for the Astronomical Society, and I do hope that you will carry it through," etc.

Also: "I have been on the point of writing to you to see if some arrangement might not be made for showing your Boston exhibit of astronomical photographs in Chicago. I think the Art Institute in Chicago would be glad to give space for such a purpose, but I have made no definite inquiries. I should of course have been happy to look after things at this end but I fear now that I will have to forego even that." Because for a fortnight he is at the Evanston Hospital,—an accident. He should before long be recovered, I hope and judge.

Snowing here.

Got reply from Gurnett, 12:25 your time. Only sent mine 10:15 ditto. Quick work. If anything important he can wire me en route.

FLAGSTAFF

The train was on time at Houck and Chambers. and then it proceeded to lose and lose. A collision near San Bernardino started the delay, and then a three days' snow-storm completed it. We simply crawled into Flag, an hour and a half late to find 50 inches of snow on the level by Dr. Slipher's metro-department gauger. Dr. S. was there to meet us having come down on Billy. The snow was within a foot of Billy's back. Impossible to get up, we went to the Commercial, after having taken an interminable time to get out of the train for the snow-drift. The staff managed to break a way for us up the hill next afternoon, and here we are. It is the first time the Observatory has ever been cut off from downtown communication. So heavy was the weight of snow that the Opera House collapsed and is now a mass of ruins. Some other buildings, also, lav down but nobody has been hurt. Judge Doe in his twenty-nine years here has never seen the like.

Nevertheless, we observed last night and with success. Our important observations on Mars, in strict accordance with theory, have been telegraphed to you. On Saturn also we gleaned results. The right side of the Crêpe ring is still wider than the left, which is interesting. We move about on the hill much as if we were in the trenches.

LOWELL OBSERVATORY

FLAGSTAFF

This is to welcome you and to say "bravo." A good idea taking Mr. O. It gives him added interest and acquaintance with other astronomers.

My last word with Prof. F. was a promise to lectrue before the Academy on my return, in April. You can find out, if you will, what they would most care to hear about.

LOWELL OBSERVATORY

FLAGSTAFF

Pictures are all we are capable of making now; for we have had no decent observing weather since the 6th. It has snowed and sulked and snowed again, and now for a change it is raining. I am glad it is that and not more snow, for it helps get rid of the latter, and much of the last bad weather has been, I think, due to the unconscionable amount of evaporation of that first mighty fall.

Like Oliver Twist I look forward—only he did not look forward, poor chap, but only wished for more—from what you glean on your travels.

Jacks abound; their bounds being printed in the snow, though being snowbound myself from walking I have seen none of them.

LOWELL OBSERVATORY
FLAGSTAFE

Those were certainly ten-strikes!!

The letter enclosed, too, was excellent. Various other bright points appeared simultaneously. In short a galaxy, yesterday afternoon! One of them from Prof. Fox, I send. Good things are gregarious, as are also bad. It was a re(a)d letter day.

Please send one of my Memoir No. 2, on Saturn's Rings, to Sir Napier Shaw, 10 Moreton Gardens, S. W., London, England, with my regards on my card.

Did I send you our photographic record of the change we announced in Saturn? If I did, another copy in Boston will be good. The change is even greater to the eye, probably, because the red in the color screen lets through the reddish tint and makes the ball seem brighter than it is, that part outside of the south cap.

Please get some copies of the Times editorial.

LOWELL OBSERVATORY

FLAGSTAFF

I am glad your Florida trip was so enjoyable, and I thank you for the elephant in the shape of a live cocoanut that arrived here safe and sound—a truly marvellous beast to come by mail.

Will you see that there await me at the Congress Hotel, Chicago, where I expect to arrive April 24—lantern slides of the memoir drawing of Saturn, the table there and the rings asteroid plate? Also any other Saturn or Mars slides suitable for my lecture in Chicago, and another in Toronto.

After warm balmy weather we are now today plunged into another snow-storm.

For your delectation and that of all Martians of the staff, I enclose a print of a recent photograph of the planet.

LOWELL OBSERVATORY FLAGSTAFF

The first horned toad made his appearance near the pumpkin patch on the 28th and the first hyacinth flower on the 29th. Now we are enjoying (?) a northeast blizzard, great wind and with snow.

After the lecture in Chicago, on to Toronto to lecture there on April 27. On the 28th to New York for a couple of days and so to Boston.

LOWELL OBSERVATORY

ELAGSTAFF

With regard to the exhibit I have just wired you. Here endeth the second lesson. Now we will sing a hymn about Mr. H.'s good work. I am enclosing you his measured drawing of the detail he saw in the photograph I sent you. Excellent!

To you goes also that capital little clipping about the planetary intercommunication prize, explanatory why Mars was excluded. Complimentary but premature!

I have decided to give an ambulance to the County, and also I am buying today a Ford for immediate fitting out of Professor Sargent, who arrives tomorrow, in his botanic trips and for general use thereafter.

I suddenly just now on a walk flushed or rather saw, my attention roused by a slight sound, a coyote shackeled by one of our traps. Two weeks ago this trap, set for a coyote, disappeared and nothing had been heard from it. I turned instinctively and there was a large brown coyote shambling along dragging a trap. It was in the little valley just this side of the outer Southern ridge of the home place. I started after him and found he could go nearly as fast as I could. So I made for the shop, roused the men and we in posse went to surround the little copse on the second rise. We failed to find him there. So I left for the house after a slight detour west and on my way flushed a jack-rabbit—the first I have seen this year—squatting in the low

furze. He had the biggest ears I think I have ever seen. So to lunch. While at lunch a telephone from the shop came saying they had caught the coyote. And there he was, to be sure. He is now not far from my window in a cage. On the way to the shop I roused a horned toad. Quite an event-ful morning! The coyote has been already photographed.

Last evening there was a great serenade from the coyotes just outside the upper gate which is where the traps are, and I suspected one had been caught; but those traps are entire, so that it was the one we had supposed lost. Poor chap, I pity him but I pity the jack-rabbits more.

740

KING EDWARD HOTEL TORONTO

Everything successful. The slides came in to me from all sides. Yes, the telegram was unnecessary, —a dead loss as against a live fulfilment—as always. The lecture went off well, apparently. They, headed by Prof. Chant, are making my visit delightful. The president of the University, Dr. Faulkner, is also charming.

A pleasant lunch with the Harvard Club just over and a dinner with a few select astronomers tonight.

LOWELL OBSERVATORY FLAGSTAFF

Mr. Godfrey Sykes turned up this morning preparatory to going to England because he can't go to Australia. We had a long chat and he is returning this afternoon to show me some rock on which chemical action by nature has altered the stone since it was pictographed!!

MARBLEHEAD, MASS.

The Northwest, you will be glad to hear, is bombarding me with epistles, and I am lecturing on paper from my armchair in moderation.

BOSTON

The breath of the woods with which my arrival was welcomed at the office this morning was good to get. I am here for the noonday hours only and that by accident; accident taking the form of my tailor from London. So I am up to order clothes for next winter of a seemingly impossible thickness now. And yet they will not be thick enough when the time comes. English stuffs never are. The envoy calls himself Mr. Judge, so he ought to know.

The bush we knew not what to call is now hanging, but not dangling, its berries nearly black. The tansies are now superb, and the goldenrod is goldening.

WARLAND, MONTANA

So far admirable adventure. Found Thompson-Seton at Glacier Park studying sign languages. Interesting. Taken by President Hill of the Great Northern, who turned up and heard we were there, in his car, to see Two Medicine Lake, etc. He was most kind and attentive. We dined with him that evening. I met all the officials of the road and Hill's charming children.

SPOKANE

Addressed two high schools this morning. Never saw such beautifully appointed centres of instruction. Fourteen hundred students in the one, sixteen hundred in the other. Now about to lunch with the Harvard Club who have been seeing me round their chief members.

THE NEW WASHINGTON HOTEL SEATTLE, WASH.

Pullman apart from the lecture was a pull-man show between the freshmen and the sophs; and being the chief contest of the day officially appointed for their struggle, the day I was there, the result being the pulling the freshmen into the pond between the contestants. Intellectually they were willing, but slow! about three hours astronomically behind Eastern Time. Golder was as good as gold. Another good man was the professor of mining and metallurgy, a man of intelligence. The president of the University of Idaho came over for us in an automobile, and the vice-president, I believe he was, drove us the scenery way to Moscow,-low rolling bare hills where except for the absence of trees carried one back to northern Vermont. The president was a man of the world who had studied at Woods Holl and was witty as well as wise. They seemed to appreciate the lecture, and a luncheon followed— I sat on the right side of a lady dean.

Back to Spokane—pronounced can—and over the Cascade Range here. B. is one of ours. A man to be pleased with. He wants to be able to send students to the observatory at Flagstaff and to come himself in the summer.

Last night I made the Sigma Xi sit up and take notice.

SHASTA, CALIF.

This card shows as near as I came to Crater Lake. Shasta was really a fine sight, and carried me back to my entrance examination at Harvard, when we were asked "Where is Shasta?" in geography.

PORTLAND, OREGON

So far! Lectured this morning at Reed College. Have not yet seen Mt. Hood; so you see more than I have. Portland old and quaint looking. I like it.

EUGENE, OREGON

A nice tree-lined streeted place, and very nice scientists who have just given me a luncheon from which I am now recuperating prior to the taking them out into the Solar system at 3 P. M.

Lectures seem to have gone off well.

SAN FRANCISCO

Here at last! to find many letters. I am delighted with the way the Providence exhibit is exhibiting itself. The Providence people, however, seem to be doing it up Brown—Their arrangements are most satisfactory.

Tomorrow a dinner at Prof. Leuschner's—He is the man at the head of the orbit-computing work at Berkeley, probably the one in the United States. I hear Campbell of the Lick is to be there. The next day to Leland Stanford where we dine with Prof. Peirce and the President.

Mr. Lampland has sent me so many books on the chance that I shall simply stagger into Flagstaff under the load.

Crater Lake I had to miss—but my eyes have been opened to what is and what is not in the Pacific States. Shasta was fine and so would have been its surroundings if only man had let it alone. Dear old Flag. loses nothing by contrast.

SAN FRANCISCO

Thank you for these capital clippings. Providence is certainly doing its part.

Last evening a dinner at Prof. Leuschner's—President and Mrs. Wheeler, Professor and Mrs. Campbell of the Lick, Prof. and Mrs. Leuschner, and then a crowded hall in which I told them all "just how it was."

Now for Palo Alto and then Flag.

Lick and Berkeley have now reached the very respectful stage, shown by their distinguished consideration of the Martian ambassador. One could not expect more of mere mortals educated in the Martian dark ages.

Clippings enclosed—for which and their well-conducted cause I am appreciatively.

LOWELL OBSERVATORY FLAGSTAFF

I am delighted that you had so good a trip—a trip without a trip—to Barnstable, Provincetown, Newport and New York.

A little one Mr. Lampland and I are contemplating for tomorrow-to Sycamore Cañon to get the willow which Rehder did not get, and of which Prof. Sargent wanted slips. The Tour of the new North West Passage is, thank heaven, over though it did me no harm and I think otherwise did good. The University of Washington has written most appreciative letters about the new Mars Fellowship. The Berkeley and the Stanford University lectures seemed to go off successfully, as did the ones before them. Yesterday I dispatched you a bunch of clippings for the album-about them all. That they will eventually prove to have been fruitful droppings to wear away the stony-intellected, as much as such a thing is possible, I hope and to have been thus not in vain.

There is still a very little aspen gold low down upon the Peaks and a sprinkling of snow high up. Of the latter there was more, they tell me, a short time ago. The pumpkins lie gathered in heaps. We did this yesterday for there was a sharp frost the night before and they cried out for blankets, against the cold. There look to be enough for humpty-humph cartloads.

I got several measures of Jupiter's Vth Satellite last night, and am well pleased with the performance considering the seeing, which began well but timidly ran off after we had got well started.

LOWELL OBSERVATORY FLAGSTAFF

Expedition yesterday to Sycamore Cañon for the willow a complete success. Found at once, and a bunch of cuttings secured for the Arboretum which will be dispatched to Prof. Sargent tomorrow. You shall see on my return our specimens before they go out there for embalming.

Please send me as soon as convenient selected bulbs that they may be planted this autumn—hyacinths, crocus, tulips and anything noteworthy. The idea has just occurred to me again so I hasten to write.

FLAGSTAFF

Thank you for the N. Y. Times of Oct. 18. Of course I did not say that the Martians were human beings: quite au contraire, as you know from the lecture in question, "Mars: Forecasts and Fulfilments." You had best deny it when it comes up. I have sent Mr. Miller a denial and a copy of the lecture to use to that effect.

LOWELL OBSERVATORY

FLAGSTAFF

I did not know that the enclosed from the *Public Ledger* came to you or I should have written you about it. If you think wise you can write H. B. B. that the Canals have always been considered by the Lowell Observatory to be strips of vegetation and that the intelligence there has never been said to be human or thought to be.

LOWELL OBSERVATORY
FLAGSTAFF

Universities from Texas to Maine now want lectures but enough is as good as a feast.

Sleet and snow yesterday; blue sky today.

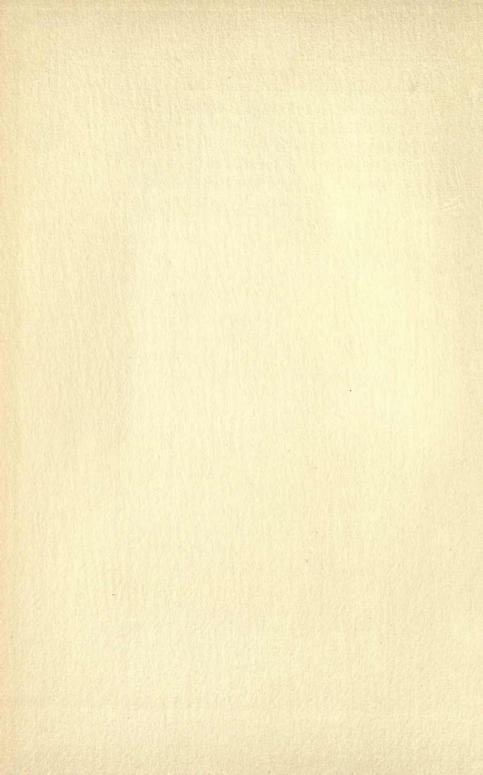
Note.—This letter was written and posted the day before Dr. Lowell passed away, Nov. 11, 1916.

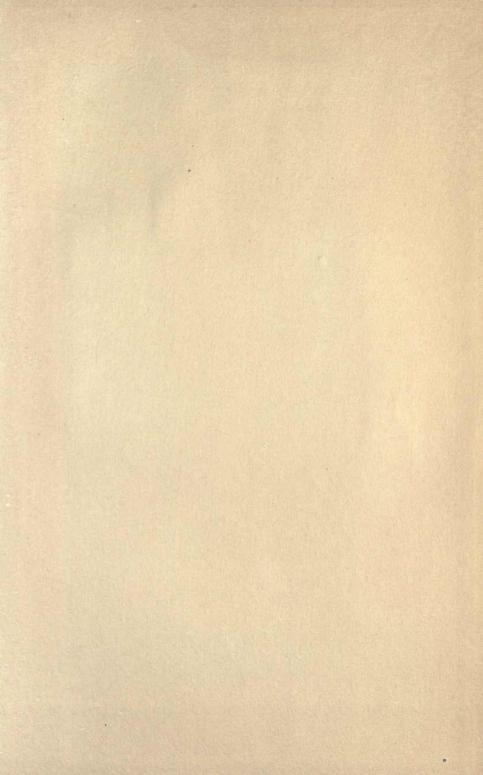
Dying, saw his life a thing Of large beginnings; and for young Hands yet untrained the harvesting, Amid the iniquitous years if harvest sprung. So in his death he sowed himself anew; Cast his intents over the grave to strike In the left world of livers living roots, And banyan-like, From his one tree raise up a wood of shoots. The indestructible intents which drew Their sap from him, Thus with a purpose grim, Into strange lands and hostile yet he threw, That there might be From him throughout the earth posterity: And so did he-Like to a smoldering fire by wind-blasts swirled— His dying embers strew to kindle all the world.

Yet not for this I praise
The ending of his strenuous days;
No, not alone that still
Beyond the grave stretched that imperial Will.
But that Death seems
To set the gateway wide to ampler dreams.
So to the last
A visionary vast,
The aspirant soul would have the body lie
Among the hills immovably exalt

As he above the crowd that haste and halt, "Upon that hill which I Called 'View of All the World'"; There let him cease from breath,— Alone in crowded life, not lonelier in death.

FRANCIS THOMPSON.





RETURN CIRCULATION DEPARTMENT 202 Main Library LOAN PERIOD 1 2 3 HOME USE 4 5 6

ALL BOOKS MAY BE RECALLED AFTER 7 DAYS

1-month loans may be renewed by calling 642-3405 6-month loans may be recharged by bringing books to Circulation Desk Renewals and recharges may be made 4 days prior to due date

DUE AS STAMPED BELOW OCT 1 2 2001		
INTERLIBRARY LOAN MAY 1 4 1981 UNIV. OF CALIF., BERK.	OCT 1 2 2001	
APR 13 199	2	
AUTO. DISC	TUL HALLD I	MAMBLE
MAR 16 199	1994 August 1805	

FORM NO. DOG, 60M, 3/80 BERKELEY, CA 94720





