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THE SOUTHWARD MOVEMENT OF ICE on the Grand Banks during June was far more decided than for the same month last year and 1886, though scarcely exceeding that of 1887. The probable limit, as forecast on the "Atlantic Pilot Chart" for June, has been well reached in the area lying east of the 50th meridian. Since June 4 there were 16 reports of icebergs south of latitude 45°, and between longitudes 50° and 47½°. Of these, 11 reports fell south of latitude 44°. The southernmost one, a good-sized berg 40 feet high, in latitude 42° 54' north, longitude 49° 54' west, came near proving very serious to one big liner, who slightly struck one of its submerged spurs on a foggy evening, June 11. A few bergs are still coming down across the parallel of 50°, but the season on the southern half of the Grand Banks is drawing to a close, and the probable limit for July has accordingly been moved northward. The fact that the fog belt is so apt to overlap the iceberg region at this season makes it doubly desirable that transatlantic lines, both east and west bound, adopt a set of routes that will skirt rather than cross this dangerous field. Such routes are advocated on the "Pilot Chart," and the slight loss of time incurred by following them gives a factor of safety that must in time be recognized by underwriters. It is to be hoped that the coming international marine conference will give this question their wise consideration.

THE GRAIN PLANT-LOUSE IN OHIO.

ONE of the most notable insect-outbreaks that has occurred in Ohio for many years is now taking place in the grain-fields of that State. The insect is one which has long been known as the grain plant-louse (*Siphonophora granaria*), having originally occurred in Europe, whence it was probably introduced into this country early in its history. It has only occasionally ravaged grain-fields here, and, so far as our present information goes, has seldom been injurious in Ohio.

The insect is now present, however, in destructive numbers over a large portion of Ohio, having already seriously injured the wheat, and is now threatening an equally serious injury to oats and other grains. Last year it was present in many of the northern counties, not becoming sufficiently abundant to attract notice until the oats were nearly ripe.

This insect is closely related to the "green fly" of house-plants, rose-bushes, etc. It is a small, greenish, or in some cases brownish, insect, with or without wings, infesting the leaves and heads of plants of the grass family. It obtains its food by inserting a pointed beak into the leaf or stem, and sucking out the sap. As the wheat gets ripe, it migrates to the more succulent oats, and, when these ripen, will go to various grasses. It brings forth living young; and its rate of multiplication is very great, it being estimated that a single louse in spring may become the ancestor of many millions before autumn.

Fortunately this insect has a great many enemies which prey upon it, and are now doing immense good in decimating its ranks. These are of various kinds, and in some places are being mistaken for foes instead of friends of the farmer. The one which is causing the most apprehension is a peculiar dark-colored, six-footed insect, generally with spots of a brighter color on its back, looking, as one person expressed it, "half worm and half bug," which is very abundant in the infested wheat-fields, crawling about over the heads. These are the young or larvæ of various species of lady-bugs, or lady-beetles, and instead of attacking the wheat, as many farmers believe, is really feeding upon the lice themselves, and destroying them by thousands. Another insect that is doing immense good is a very small four-winged fly that deposits an egg within the louse. This egg hatches into a grub that develops at the expense of the louse, destroying it, and emerging again as a four-winged fly. The dead lice "struck" by these parasites become dull brown in color, and adhere to the leaf or stem upon which they were feeding.

Besides these, various other enemies are attacking the lice; and the indications now are that the outbreak will be so checked by the end of the season, that there will be little danger of a repetition of the attack next year.

The presence of English sparrows in the wheat-fields led some to believe that they were feeding upon the lice; but an examination of stomach contents of a number shot while on wheat, showed that the grain itself was what they were after, no more lice being eaten than was necessary to get the grain.

As yet no practical artificial remedy for the grain plant-louse is known. At the Ohio Agricultural Experiment Station at Columbus they have found that kerosene emulsion will destroy them; but the difficulty of reaching them with this substance, when they occur on the under surface of the leaf, or embedded in the chaff of the head, makes the remedy hardly practical. The injury to the wheat will be manifested by the shrivelling of the grain, due to the extraction of the sap necessary for its perfect development.

THE BRUCE PHOTOGRAPHIC TELESCOPE.

THE Astronomical Observatory of Harvard College has received from Miss C. W. Bruce of New York a gift of fifty thousand dollars, to be applied "to the construction of a photographic telescope having an objective of about twenty-four inches aperture, with a focal length of about eleven feet, and of the character described by the director of the observatory in his circular of November last; also to secure its use under favorable climatic conditions in such a way as in his judgment will best advance astronomical science."

This instrument will differ from other large telescopes in the construction of its object-glass, which will be a compound lens of the form used by photographers, and known as the "portrait lens." The focal length of such a lens is very small compared with its diameter, and much fainter stars can be photographed in consequence. The advantage is even greater in photographing nebulae or other faint surfaces. Moreover, this form of lens will enable each photographic plate to cover an area several times as great as that which is covered by an instrument of the usual form. The time required to photograph the entire sky is reduced in the same proportion. A telescope of the proposed form, having an aperture of eight inches, has been in constant use in Cambridge for the last four years, and is now in Peru photographing the southern stars. It has proved useful for a great variety of researches. Stars have been photographed with it too faint to be visible in the fifteen-inch refractor of the observatory. Its short focal length enables it to photograph as faint stars as any which can be taken with an excellent photographic telescope having an aperture of thirteen inches. The eight-inch telescope will photograph stars about two magnitudes fainter than can be taken with a similar instrument having an aperture of four inches. A corresponding advantage is anticipated from the increase of the aperture to twenty-four inches. Each photograph will be thirteen inches on a side, and will cover a portion of the sky five degrees square, on a scale of one minute to a millimetre. The dimensions will be the same as those of the standard charts of Chacornac and Peters. The entire sky would be depicted upon about two thousand such charts.

It is very important that the best possible location should be found for such an instrument. In Europe and in the eastern portions of the United States, where nine-tenths of the principal observatories of the world are situated, it is cloudy for a large portion of the year. Great advantages are expected from a location, as on some California mountain, where clouds and haze are seldom seen.

This generous gift offers an opportunity for useful work such as seldom occurs. It is expected that the Bruce photographic telescope will exert an important influence upon astronomical science by the large amount of material that it will furnish.

CHARITY AND KNOWLEDGE.¹

THIRTEEN years ago, during the centennial celebrations of Independence Day, the university founded by Johns Hopkins began its work; and now, as we commemorate a completed century of constitutional life, the hospital, gift of the same donor, throws open its doors. These buildings, on which thought, time, and wealth have been freely spent, are now consecrated to the ministry of mercy and the prolongation of life. Science and charity, knowledge and pity, skill and sympathy, are here installed in the service of mankind.

That large-minded citizen of Maryland, "who, by noble gifts for the advancement of learning and the relief of suffering, has won the gratitude of his city and his country," found two words adequate to his great ideas. "University" and "hospital" were his chosen terms, and he linked them together by this significant phrase: "Bear constantly in mind that it is my wish and purpose that the hospital shall ultimately form a part of the medical school of that university for which I have made ample provision by my will." How brief the phrase, how large the purpose! — "apples of gold in pictures of silver."

Like James Henry Roosevelt of New York, "a man upright in his aims, simple in his life, and sublime in his benefaction,"² whose hospital and dispensary give clinical instruction to the College of Physicians and Surgeons; like James Lenox of New York, whose munificence established a public library and gave birth to a hospital, — Johns Hopkins, already honored as a patron of learning, will be henceforward remembered in the annals of charity and

medicine. May we not almost say of him, as Pindar said of Theon (Olympic II., Cary's version), —

"And I will swear
That city none — though she unroll,
A century past, her radiant scroll —
Hath brought a mortal man to light
Whose hand with larger bounty flows.
The blessings to that man we owe,
Say, who shall hope to count?"

We may form an idea of what this hospital may become by the study of a like institution in London. About a century and a half before Johns Hopkins died, the days of Thomas Guy were ended. Like our benefactor, he had lived unmarried to the age of eighty years, and from humble beginnings had acquired a fortune, with which he provided for the establishment of a hospital. The amount of his gift was more than a million dollars (£238,292). The beneficent influences of Guy's Hospital are now known in every part of the globe. It is doubtless safe to say that every one of us has shared, indirectly, in its benefits. The name of the great surgeon, Sir Astley Cooper, would alone give renown to the hospital to which he was attached, — Sir Astley Cooper, of whom it was said that from the period of his appointment to Guy's, until the moment of his latest breath, he was every thing and all to the suffering and afflicted; his name was a host; but his presence brought confidence and comfort.¹ Addison and Hodgkins, whose names are familiar to the historians of medicine, were physicians in that hospital: so was Richard Bright, whose discoveries have been pronounced the most important contribution to medical science made in the first half of the nineteenth century. The observations and studies made in Guy's Hospital since 1836 fill fifty volumes. Thousands of medical students have been trained within its walls. "Their presence," says a competent observer, "has made the hospital." Hundreds of thousands of patients have received relief from the treatment there afforded. In a single year, five thousand in-door patients have been cared for, and more than thirty thousand out-door patients have sought advice.

But we are planning for a future much longer than a century and a half; for a history as long as that of St. Bartholomew's or St. Thomas's, which now, after many centuries, are more useful than ever.

By a curious coincidence, as I had reached this point in the preparation of my address, I received a volume from Dr. Norman Moore, the warden of St. Bartholomew's Hospital in London, bearing an inscription so welcome and so apposite, that I will read it: "To the library of the newest of hospitals, this account of the progress of medicine in one of the most ancient is given by Norman Moore — with the earnest hope that the Johns Hopkins Hospital may flourish at least as long as the Royal Hospital of St. Bartholomew in Smithfield, and prove no less useful to mankind — on the opening day of the Johns Hopkins Hospital, 1889."

This little book is full of suggestions for us. First, as to the longevity of a hospital. "For more than seven hundred and fifty years the hospital has flourished upon its present site; and its Smithfield gateway, through which passed men of the generation whose fathers saw William the Conqueror enter London, has ever since been open to the sick poor."

Then as to the progress of medical science. Here you may see "how the physician grew from a schoolman into a scientific observer, and how the surgeon, who appeared on the scene in livery and without learning, grew from a handicraftsman to be a man of science."

Next as to the training of illustrious men. Here you will find a record of the names and services of Caius, Bernard, Pott, Abernethy, Lawrence, and Paget; you may learn that Dr. Thomas Young, the originator of the undulatory theory of light, was here a student; and you will come upon the story of one more famous than any person I have named, — the discoverer of the circulation of the blood, the illustrious Harvey.²

¹ Letter of Dr. Roots in the Memoir of Sir A. Cooper.

² Dr. Moore calls attention to the fact that it was a fund given by Dr. Caius to encourage the study of anatomy, which was the immediate means of leading Harvey to his discovery and also to a remark in one of Harvey's lectures that it was a passage of Aristotle which first suggested to him the idea.

¹ An address by Daniel C. Gilman, delivered at the opening of the Johns Hopkins Hospital, Baltimore, Md., May 7, 1889.

² This phrase (like that above, referring to Johns Hopkins) is taken from a memorial tablet.