

and which the writer believes is in whole or in part of the same age as the older loess on the Illinoian.

The older loess on the Illinoian is post-Illinoian, pre-Peorian loess in age. It was deposited after the development over wide areas, chiefly by chemical weathering, of gumbotil more than three feet thick on the Illinoian till. Furthermore, there was sufficient time after this loess was laid down for it to have been leached in places to a depth of several feet before the deposition of the Peorian loess which as stated is but little younger than the Iowan till. The interval between the time of deposition of the Illinoian till and the deposition of the Peorian loess was of sufficient duration to account for (a) the weathering of the unoxidized and unleached Illinoian till to gumbotil more than three feet thick; (b) the deposition of a loess on the gumbotil and eroded surfaces of Illinoian till, and (c) the leaching of this loess in places to a depth of several feet. In contrast, the Peorian loess was deposited very soon after the deposition of the Iowan till. These facts indicate clearly that the Iowan till is much younger than the Illinoian till.

Regardless of whether or not the post-Illinoian, pre-Peorian loess is Loveland in age it "adds new evidence to that which has been presented for many years by several geologists in support of the view that the Iowan glacial stage is much younger than the Illinoian glacial stage."

The writer discussed fully the relative ages of the Iowan and Illinoian drift sheets in a paper in *American Journal of Science*, December, 1928.

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PECULIARLY SHAPED HAILSTONES

ON Saturday afternoon, June 15, at about 3 o'clock, what may have been considered a typical semi-cloudless sky became suddenly overcast from the southwest followed by a slight shower of unusually large drops which soon were accompanied by occasional hailstones. The Weather Bureau's forecast was "increasing cloudiness." Within a few minutes the rain turned to hail. It was not a heavy hail-storm; no damage was done to the flowering shrubs in our garden—a few lily-pads were pierced—yet in a space about seventy-five feet square the lawn was strewn with the most grotesque-shaped hailstones that I ever had chanced to see. I picked up hurriedly four specimens, the largest of which I sketched from memory (Fig. 1). It was about 6.5 cm long, 2 cm thick and about 3.5 cm wide. The "stone" seemed to be made up of an agglomerate of a dozen or more smaller stones frozen together. The nucleus of the separate stones could readily be distinguished. The mass was

flinty hard, as freshly frozen ice, and except for the nuclei was clear.

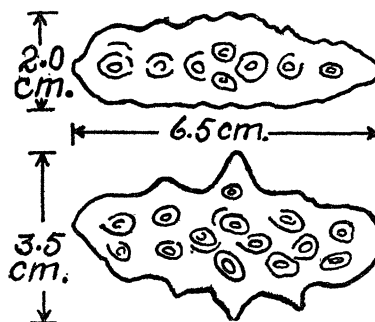


FIG. 1

The hail-storm was not characterized by large hailstones, the largest single-nuclear stone that came to my notice in the garden was but 1½ to 2 cm in diameter. I have witnessed many hail-storms of much greater severity and of longer duration, but never saw the stones frozen in agglomerates, especially of such size.

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MORTALITY STATISTICS AND THE LENGTH OF LIFE

PROFESSOR FORSYTH'S paper in *SCIENCE*, July 26, directly contradicts the prevalent opinion on the subject discussed. Mortality statistics are not a satisfactory basis for generalization, and the probability that the author's conclusions may have been influenced by the surface aspects of the figures referred to is suggested by several of his statements.

The great reduction in infant mortality and in deaths from communicable diseases in recent years has postponed death, in such cases, to later dates, and the lives thus prolonged are usually sustained by diminished vitality. It is reasonable to expect that the average general health of the community has been reduced, and the average death-rate during subsequent years increased, by these extended lives. Consistently, if a substantial number of these previously short lives has been extended to the forties and fifties, the average age, at death, of all persons passing the age of forty will be reduced. The ratio of the number of persons reaching the age of fifty to the total population will also be reduced.

The increasing mortality due to certain organic diseases is frequently referred to in current discussions as indicating a greater susceptibility to such diseases, induced by changes in our manner of living or by the devitalizing influence of organic stresses incident to more strenuous activities. There is absolutely no foundation in fact or experience for such beliefs. More people escape death by croup, diphtheria and smallpox than formerly, but, as all must ultimately die,

it is inevitable that there should be a corresponding increase in the number of deaths from other causes. We have reason to expect a continued reduction in mortality from tuberculosis, typhoid and other prevalent diseases in the future, which should appreciably prolong the average span of human life. As many of

these lives will be terminated later by cancer and diseases of the heart, it will be absurd to draw alarming inferences from subsequent statistical reports showing increased deaths from these causes.

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QUOTATIONS

SIR NORMAN LOCKYER AND THE EDITORSHIP OF "NATURE"¹

THIS book is essentially for those who know and use *Nature* and knowing it wish to understand the man who brought it into being—as a child of quite unusual vigor and distinction—giving to it, almost from its birth, the individuality and strength of character which have long made it everywhere the recognized organ of scientific opinion: the *Times* of science. The achievement was his great contribution to scientific advance, of far greater value, I venture to say, because of the effect it has had in promoting the appreciation of scientific endeavor, than his work as an inquirer—which was largely that of a seer, in advance of his time, needing interpretations that only later additions to knowledge were to make possible. Still, the spirit of discovery was at the root of his being: from it he derived his force and it gave to him his success. Wise men like Huxley, seeing this in him, became his willing slaves.

The establishment of *Nature*, now fifty-nine years old, was a literary, not a scientific, feat, yet one needing for its success a rare combination of qualities—not merely literary but also editorial ability, breadth and intensity of scientific outlook and social qualities of an unusual force and range. The journal was not a financial success until after thirty years. To have kept the enterprise alive, during so long a period, was an astounding exercise of determination, diplomacy and skill. Lockyer was never an easy man to get on with. At times impetuous, often intolerant, always impatient beyond measure and most assertive, from an early date he held scientific workers generally at his behest. His whole-hearted unselfish devotion to his enterprise, his high aims, the importance to us of its success, the difficulty of the work—were so clearly recognized that we all rallied to his standard. There was a feeling that the journal had to be. *Nature* is a

¹ From a review in *Nature* by Professor Henry E. Armstrong of the "Life and Work of Sir Norman Lockyer," by T. Mary Lockyer and Winifred L. Lockyer, with the assistance of Professor H. Dingle, and contributions by Dr. Charles E. St. John, Professor Megh Nad Saha, Sir Napier Shaw, Professor H. N. Russell, the Reverend J. Griffith, Sir Richard Gregory and Professor A. Fowler. Macmillan and Company.

power to-day because of the sure foundations he laid: upon this his successor—long his assistant and most severely trained in his service—during the past nine years, has been able to build broadly and judiciously, to meet the needs of all schools of scientific activity and opinion, without fear or favor. *Nature* has been lucky in her assistants—Keltie and Gregory. Is the succession secure? I tremble, in asking the question, by the way.

In this connection, I may direct attention to the following passage in "The Earlier Life and Letters of Walter H. Page":

Consider the making of a periodical: what is the difference between a fairly good one and a really great one? It is only the difference of personalities and ideas that go into them. This is so simple that it sounds silly to state it. But there is no secret about making a great magazine. You must have, of course, a good craftsman at the head of it, a man of editorial skill, of good judgment, of some courage and of character, but these are all common qualities and with all these you will make but a fairly good magazine. The stuff to make a great periodical of is yet lacking and this stuff is a prodigality of ideas—such as no one man has or can have. Ideas must grow about it with the very luxuriance of nature, must come to it from every quarter. It must have enough waste material to make all the other periodicals better than they are now. This requires more than the acquaintance and good-will and casual suggestions of fertile men; *it requires, to a degree, the identification of their personalities with it* (my italics).

It is because Lockyer was preeminently successful in securing "the identification of the personalities" of scientific workers and of advanced scientific opinion of the day with his journal that he made *Nature* what it is and that his successor is successful. Page necessarily feigned modesty in appraising the qualities needed in an editor and set these far too low. Editors must be peculiar people to succeed: far more than good craftsmen. *Nature* has been a success, because Lockyer wove for it a magic carpet upon which scientific workers in all subjects could be attracted to sit: to preserve this in effective condition can never be an easy task.

The story of Lockyer's life and work is told in the book in a general biography covering 226 pages, written by Professor H. Dingle, upon material com-