UNIVERSITY AND EDUCATIONAL NOTES

ANNOUNCEMENT is made that the residue of the estate of the late Hamilton B. Tompkins, of New York City, left in his will to Hamilton College, amounts to $650,000.

THE salary endowment fund of Vassar College has reached the sum of $3,030,000.

A RESEARCH fellowship of $1,000 for the study of orthopedics in relation to hygiene and physical education will be offered by Wellesley College, beginning in September and continuing for one year.

DR. FRANK I. KERN, professor of botany, has been appointed dean of the newly established Graduate School of the Pennsylvania State College.

M. D. HERSEY, associate professor of physics, R. P. Bigelow, R. R. Lawrence and H. W. Shimer have been promoted to full professorships at the Massachusetts Institute of Technology. Dr. Bigelow will be professor of zoology and parasitology; Professor Lawrence is a member of the electrical engineering department; Dr. Shimer will be professor of paleontology.

DR. R. E. COKER, M.S. (North Carolina), Ph.D. (Johns Hopkins), head of the division of scientific inquiry of the U. S. Bureau of Fisheries, has been elected to a professorship of zoology in the University of North Carolina.

GEOGRAPHERS who received their doctorates at Chicago have recently been promoted as follows: To a professorship, Carl O. Sauer, at the University of Michigan. To associate professorships, Stephen S. Visher, at Indiana University; Wellington D. Jones and Charles C. Colby, at the University of Chicago. To assistant professorships, Robert S. Platt and Derwent S. Whittlesey, also at Chicago.

AT the University of Kansas, assistant professor Curt Rosenow has been promoted to an associate professorship in psychology and Dr. Hulsey Cason (Columbia, '22) has been appointed assistant professor of psychology.

DR. ELWOOD S. MOORE, dean of the School of Mines of the Pennsylvania State College, has resigned, to take charge of the work in economic geology at the University of Toronto.

DR. JOHN MACPHERSON, lately retired from the post of commissioner of the Board of Control for Scotland, has accepted for three years the professorship of psychiatry at the University of Sydney.

DISCUSSION AND CORRESPONDENCE

OBSERVATIONS OF FALLING METEORITES

TO THE EDITOR OF SCIENCE: The numerous recently reported occurrences of falling meteorites are so contradictory and so at variance with what reason would lead one to expect as to make one quite cynical concerning the value of human testimony.

Few natural phenomena, it may be stated by way of introduction, are more likely to unduly excite the imagination than those attendant upon a fall of meteorites. The suddenness, the unexpected nature of the occurrence, the light and noise, and perhaps above all the sensation of fear aroused when a solid body is suddenly projected from seemingly empty space, all have effect, and it is not surprising that accounts are widely variable—dependent upon the flexibility of the imagination, more perhaps than upon powers of observation. Few persons, however well trained, can look calmly and critically upon the phenomena. Fewer yet can, in the brief space of time, estimate the height of the body when first seen, or note such facts as may be of service in calculating its direction and rate of progress.

A peculiar feature of the case is the lack of ability on the part of an observer to locate the place of fall unless, indeed, he happens to actually see it strike the ground. This is due to several causes, and, in part at least, to the low angle at which the stones sometimes enter our atmosphere, which permits a continuation of flight for some distance, even miles, beyond the point at which they seemingly must strike the earth, and in part to the fact that one is unable to correctly estimate the distance, which may be much greater than supposed. No less an experienced student and collector than the late H. A. Ward once told the writer of his

experience in such matters. He was sitting in front of a house occupying a somewhat elevated position with reference to the rest of the town. Suddenly a meteorite appeared descending from the sky, and fell, he was sure, within a certain square on the lower level. He at once proceeded to the spot, only to find that he was mistaken but that it had fallen a "few blocks away." At this second point the same experience was repeated, and the stone finally located some twenty miles beyond the point where he was "certain" he had seen it strike.

An equally good illustration was offered in the flight of a meteorite over the city of Washington on Sunday, January 12, 1919. This was first called to my attention by a man some eighty miles south of Washington who saw it, as he assured me, strike the ground within one half a mile of where he was standing. Inasmuch as the meteorite had been observed passing over Washington in a northeasterly direction his statement was not accepted. Further reports of the fall in the immediate vicinity of the city and a few miles away were also received. Taking the direction along which the meteorite was traveling, I followed it up by correspondence for a distance of over 300 miles into northeast Pennsylvania where it became lost. The last reports received indicate that it was going in two directions at once (!) and it is very probable that it actually fell somewhere in that vicinity, nearly 400 miles from where first *seen* to fall.

Experiences similar to the above are common. In many other instances stones which were "seen to fall" have proved to be of strictly terrestrial origin. There comes a sudden flash and report, the observer goes quickly to the spot and there finding an object which had not previously attracted attention, assumes it to be a meteorite and in perfectly good faith writes some museum announcing his discovery and willingness to dispose of the same. There is probably not a museum of importance in the world that does not annually receive from one to many announcements of this kind. The receipt even of glacial boulders which were "warm when picked up" or "which set fire to the grass at the point where they fell" is not unusual.

This leads to the second point to which attention need be directed—that relating to the reported temperature of the fallen body, which is often to the effect that "it was too hot to touch," or has been the cause of fires. As in a great majority of cases it is impossible to investigate the actual temperature after the first report has been made it may be well for the moment to consider the probabilities.

While the original source from which meteorites are derived is problematical it yet seems certain that they have been wandering for an indefinite period in space and at a temperature of "absolute zero." At the time of entering our atmosphere it is fair to assume they are cold throughout to a degree of which we can have no conception. During the few seconds in which they are passing through our atmosphere, they become intensely heated on the immediate surface, but these portions are immediately stripped off, and, as we have absolute proof, the heat never extends to a distance of more than two or three millimeters. Before striking the ground the speed of the body is so far checked that it ceases to glow and the thin film of molten material quickly congeals. Cooling of the surface, owing to the intense cold of the interior, must follow rapidly and it is questionable in the writer's mind if a large majority of the reports of the heated condition of the meteorite when found are not based upon expectation rather than fact. He even goes so far as to suggest that when it shall become realized by the public at large that the chances are in favor of a meteoric stone being cold rather than hot when found, it will be so reported.

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ORIGIN OF SOIL COLLOIDS

DR. WHITNEY[1] has advanced an interesting theory as regards the origin of soil colloids. He says, in part:

My present view is that particles of matter derived from silicate rocks and other soil-forming minerals when they approach a diameter of .0001 mm. contain relatively so few molecules that the

[1] SCIENCE, 54: 656, 1921.