through the cycle of union (facilitated by any charges they may carry) and division, of coalescence and disruption, from one to many times, with the formation on each at every disruption again *according to experiment*, of a correspondingly increased electrical charge. The turmoil compels mechanical contact between the drops, whereupon the disruptive equalization of their electrical potentials breaks down their surface tensions and insures coalescence. Hence, once started, the electricity of a thunderstorm rapidly grows to a considerable maximum.

After a time the larger drops reach, here and there, places below which the updraft is small—the air can not be rushing up everywhere—and then fall as positively charged rain, because of the processes just explained. The negative electrons, in the meantime, are carried up into the higher portions of the cumulus, where they unite with the cloud particles and thereby facilitate their coalescence into negatively charged drops. Hence the heavy rain of a thunderstorm should be positively charged, as it almost always is, and the gentler portions negatively charged, which also very frequently is the case.

Such in brief is Dr. Simpson's theory of the origin of the electricity in thunderstorms, a theory that fully accounts for the facts of observation and in turn is itself abundantly supported by laboratory tests and imitative experiments.

. . . . . .

The foregoing are only a selected few of the many recent contributions to the physics of the air, but they are sufficient, it is hoped, to show that meteorology is indeed a progressive branch of physics, and one eminently suitable to every type of scientific talent. The close observer, the clever experimentalist, and the keen analyst all can find in the phenomena of the atmosphere inexhaustible material and endless opportunities. But in science opportunity is only a synonym for duty, and of all words duty is the noblest.

W. J. Humphreys

U. S. Weather Bureau

SCIENTIFIC EVENTS

THE HISTORY OF MEDIEVAL INSTITUTIONS

Professor David Eugene Smith, of Teachers College, Columbia University, writes:

The Société de Scolastique Médiévale, founded by M. Francois Picavet, professor in and secretary of the Collège de France, was changed into the Société d' Histoire Générale et Comparée des Philosophies Médiévales in 1906. This society is interested in the study of the history of dogma and religion, the history of law, the history of letters, the history of philosophy, and the history of science. Monographs have been issued in all these several lines and others are in the course of preparation.

It may seem that this is not an opportune moment for scholars to be considering such a line of work. Upon this point a letter from M. Picavet, written just before the armistice, has this to say: "En ce moment ou nous ne pouvons, en raison de notre âge, que faire des voeux, pour les combattants ou venir en aide aux prisonniers, aux soldats et aux évacués des pays envahis, j'ai pensé que nous pourrions nous rendre utiles en préparant les moyens de nous suffire sur le terrain scientifique et universitaire, entre nous gens de l'entente et amis de l'entente."

Few scholars have been called upon to make a greater sacrifice in this war than M. Picavet, and his determination to continue his great work in the field in which he has done so much will doubtless appeal to all scholars in this country as in Europe.

M. Picavet would be glad to hear from American scholars who are interested in the work of the society and to have their names enrolled as sympathetic with its work. If they should later become so interested as to contribute in any way to the support of the society, this would be a welcome decision; but this is not the immediate purpose. It would be a helpful act if those interested in this line of work were to write to M. François Picavet, Collège de France, Paris, expressing their interest in the society.

If America could in some way secure an endowment of $24,000 for maintaining for ten years the chair which M. Picavet fills with such distinction in the Collège de France, a great impetus would thereby be given to this work.

ACTIVITY OF KILAUEA VOLCANO

Professor Vaughan MacCaughey, of the College of Hawaii, Honolulu, writes under date of January 22:

Within the past few days word has been received from Mr. L. W. De Vis-Norton, at Kilauea Volcano, of the remarkable activity of this famous crater. He states that "tremendous changes are in progress at Kilauea, and there is no indication whatsoever of any cessation of the monumental rising of the entire vast lava column. . . . Over the southwest brink, a wide stream of glistening lava is sluggishly flowing in the direction of the Ka'u Desert, not with the spectacular cascading torrents of the southeastern flows of last March, but with a steady, stealthy gliding, which gains ground slowly at its face, but which piles up into tremendous masses from its source forward. Upon this southwestern side there is no longer any indication of the Hale-mau-mau Pit."

A vivid description is given of the lava plateau which has been heaped up over the former pit; "it is in reality a vast tilted roof which has been built entirely over Hale-mau-mau; broken in four or five places by almost circular spatter-walls erected thereon, within whose circumference are lakes, fountaining heavily and flinging molten torrents outward over the walls to flow onward over the surface of the roof."

The effect is a peculiar one, for as the lava seeks the hollows and fills up irregularities, it is producing an almost perfectly smooth sweep of floor over a mile in circumference. This condition will be stable for several hours, and then, as though the superincumbent weight had become insupportable, vast sections of the plateau will sink inward, releasing from beneath gigantic torrents of crimson and orange liquid lava, which surge upward and roar away over the adjacent surfaces, causing them in their turn to collapse and provide more pyrotechnics upon a tremendous scale, and repeating the process over and over again.

"Were it not for the fact that the southwestern overflow is following *a most unusual process* of damming itself back in walls of its own building as it advances," states Mr. Norton, "we should be witnessing such a torrential discharge of lava as *has never been seen* at Kilauea within the memory of man."

It is becoming increasingly evident that the present Hale-mau-mau rise is the usual equinoctial rise upon a greatly magnified scale, due partly to the abnormal squeezing of the Hawaiian fissure system, and to the unusual smallness of the previous fall after the last solstice, when the lava column withdrew little more than a hundred feet.

Starting its upward movement from a mean level some two hundred feet *above* the normal, it is only natural that the column should have reached the pit-rim a full month earlier than was anticipated. Since the column will, in the ordinary course of events, continue to rise until the time of the equinox in March next, the overflow may be expected to then attain an unprecedented magnitude.

A PROPOSED AMERICAN SOCIETY OF MAMMALOGISTS

A COMMITTEE of representative American mammalogists, including men from different parts of the country in its membership, has recently been at work on plans to organize a society for the promotion of interest in the study of mammalogy. It is intended that the society shall devote itself to the subject in a broad way, including investigations of habits, life histories, evolution and ecology. The plans call for the publication of a journal in which both popular and technical matter will be presented, for holding meetings both general and sectional, aiding research, and engaging in such other activities as may be deemed expedient. It is hoped to secure the active participation of all interested. The organization meeting will be held at the New National Museum, Washington, D. C., April 3 and 4, 1919, sessions commencing at 10:00 A.M. and 2:00 P.M. No program of papers has been planned for this meeting. The organization committee includes the following: Hartley H. T. Jackson, Chairman, U. S. Biological Survey; Walter P. Taylor, Secretary, U. S. Biological Survey; Glover M. Allen, Boston Society of Natural History; J. A. Allen, American Museum of Natural History; Joseph Grinnell, University of California; N. Hollister, National Zoological Park; Arthur H. Howell, U. S. Biological Survey; Wilfred H. Osgood, Field Museum of Natural History; Edward A. Preble, U. S. Biological Survey; Witmer Stone, Academy of Natural Sciences of Philadelphia. Further information will be furnished by either the chairman or the secretary, to whom applications for charter membership should be transmitted.

SCIENTIFIC NOTES AND NEWS

THE American Institute of Mining Engineers at its meeting in New York on Febru-