in the rear." This conclusion, Mr. Clayton believes, "will probably find general acceptance as representing the conditions up to 6 kms. everywhere in temperate latitudes." In answer to a criticism made by Hann (*Met. Zeitschr.*, Nov., 1905, 491) to the effect that Mr. Clayton had determined the central areas of cyclone and anticyclone from the time of high and low pressure at Blue Hill, and not from the weather maps, our author points out that the weather maps were used. We ourselves carelessly omitted to point out that Dr. Hann was mistaken in his objection, on the occasion of our mention of this matter in these notes some months ago.

CLIMATOLOGICAL ATLAS OF INDIA.

One of the most attractive, as well as one of the most important publications in climatology ever issued is the new 'Climatological Atlas of India,' prepared by Sir John Eliot, lately meteorological reporter to the government of India, and published by Bartholomew, of Edinburgh. This atlas contains one hundred and twenty colored maps, showing with great detail and in well-selected, harmonious colors, the distribution of the climatic elements over the Indian empire. We learn from the preface that a handbook of the weather and climates of India is in preparation and will be a companion volume to the atlas. India has for many years been well known for its admirable meteorological service and for its long series of valuable meteorological publications. Sir John Eliot has now fittingly ended his term of service as head of that organization by preparing this magnificent volume which will always stand as a monument to his work.

MONTHLY WEATHER REVIEW.

The last number of the *Monthly Weather Review* (No. 6, 1906) contains an illustrated paper by Professor J. E. Church, Jr., of the University of Nevada, on the new 'Mount Rose Weather Observatory,' in Nevada; a plea for the 'Use of the Lantern in Teaching Meteorology,' by Professor J. P. Goode, of the University of Chicago; a further instalment of his 'Studies on the Thermodynamics of the Atmosphere,' by Professor F. H. Bigelow; a description of a waterspout near Tarrytown, N. Y., July 16, 1904, illustrated by six half-tones; an account of 'The Tornado of June 6, 1906, near La Crosse, Wis.,' by G. A. Oberholzer, and of 'The Tornado of April 12, 1906, at Stafford, Kansas,' by W. E. Seright; and several short papers on 'The Structure of Hailstones.'

NOTES.

Professor W. I. Milham has published a 'Syllabus of a Course on Meteorology,' given by him in Williams College. The course is a three-hour elective for juniors and seniors, and is much more thorough than most of the courses at present being given in American colleges. Practical work in making observations, in generalizing from meteorological data and in making forecasts, is required as part of the course.

Ciel et Terre for September 1, 1906, contains articles on the dust from Vesuvius observed at Brussells last spring, and on atmospheric waves noted at the observatory of Meudon, by Millochau, by means of the telescope.

The Annual Report of the Transvaal Meteorological Department for the year ending June 30, 1905, contains several charts showing the distribution of the various meteorological elements; also half-tones of lightning views taken at Vereeniging in 1904–5.

R. DeC. Ward.

RECENT IMPORTANT ANTI-MALARIA WORK.

The latest reports on the measures taken to abolish malaria from Klang and Port Swettenham in Selangor, Federated Malay States, indicate the most admirable results. These measures were undertaken first in 1901 and 1902, and have been reported upon from time to time in the *Journal of Tropical Medicine*. The expenditure undertaken by the government with a view to improving the health of the inhabitants of these towns has been fully justified by the results which promise to be of permanent value. The total expenditure for the town of Klang, down to the end of 1905 was £3,100, and the annual permanent expenditure is about £60 for clearing earth

drains and £210 for town gardeners. For Port Swettenham the total expenditure to the end of 1905 was £7,000 and the annual cost of keeping up the drains, etc., is approximately £40 for clearing earth drains and £100 for town gardeners.

The careful tabulation of cases and deaths and of the results of the examination of blood of children in especially drained areas indicate the following conclusions: (1) Measures taken systematically to destroy breeding places of mosquitoes in these towns, the inhabitants of which suffered terribly from malaria, were followed almost immediately by a general improvement in health and decrease in death rate. (2) That this was due directly to the work carried out and not to a general dying out of malaria in the district, is clearly shown by figures pointing out that while malaria has practically ceased to exist in the areas treated it has actually increased to a considerable extent in other parts of the district where anti-malaria measures have not been undertaken.

The statistics for 1905 are even more favorable than those for 1902, which gives a very strong evidence in favor of the permanent nature of the improvement carried out. In fact, it seems as though malaria has been permanently stamped out at Klang and Port Swettenham by work undertaken in 1901, and this experience in the Malay States should be of value to those responsible for the health of communities similarly situated in many other parts of the world.

Another striking example of excellent work of this kind is found in the recently published report on the suppression of malaria in Ismailia, issued under the auspices of the Compagnie Universelle du Canal Maritime de Suez. Ismalia is now a town of 8,000 inhabitants. It was founded by DeLesseps in April, 1862, on the borders of Lake Timsah, which the Suez Canal crosses at mid-distance between the Red Sea and the Mediterranean. Malarial fever made its appearance in very severe form in September, 1877, although the city had up to that time been very healthy, and increased so that since 1886 almost all of the inhabitants have suffered from the fever. In 1901 an attempt to control the disease was made on the mosquito basis, and this attempt rapidly and completely succeeded, and after two years of work all traces of malaria disappeared from the city. The work was directed not only against anopheles mosquitoes, but against other culicids, and comprised the drainage of a large swamp and the other usual measures. The initial expense amounted to 50,000 francs, and the annual expenses since have amounted to about 18,300 francs.

The results may be summarized about as follows: Since the beginning of 1903 the ordinary mosquitoes have disappeared from Ismailia. Since the autumn of 1903 not a single larva of anopheles has been found in the protected zone, which extends to the west for a distance of one thousand meters from the first houses in the Arabian quarter and to the east for a distance of 1,800 meters from the first houses in the European quarter. After 1902 malarial fever obviously began to decrease, and since 1903 not a single new case of malaria has been found in Ismailia.

Last May Dr. Ronald Ross, of the Liverpool School of Tropical Medicine, to whom the writer is indebted for information concerning these instances just cited, was asked by the Lake Kopais Company in Greece to make a study of the malaria which has long been prevalent on their estates in that part of Greece. He made the trip and carried out the investigation which revealed an unexpectedly high degree of malarial infection in most of the localities examined. He also learned from members of the Grecian Anti-malaria League that the district of Kopais is by no means exceptional in this respect, and that malaria is very prevalent in many rural areas throughout the country.

As an example of the conditions, Dr. Ross found that in the village of Moulki, near the ancient Heliartos on the Kopaic Plain, of eighty persons examined, in thirty-eight there was an enlargement of the spleen—nearly fifty per cent.; at the village of Mazi he found it in thirteen cases out of forty; at Skripou (the ancient Orchomenos) it occurred in twenty-five out of fifty school children—exactly fifty per cent. He suggests the query as to how

far malaria has influenced the past history and the modern development of Greece, and shows that the regions maintaining most of the rural population are the ones most seriously affected—in fact, a vigorous country life can not exist under the conditions found. Where villages, churches, inns and country houses should be scattered about the landscape, the villages are few and poor and country houses are almost entirely absent.

The Antimalarial League of Greece, of which H. M. the King of Greece is patron, has already commenced work against malaria, and appeals for help to all those interested. The Liverpool School of Tropical Medicine has published an appeal for subscriptions, and H. R. H. Princess Christian has consented to be the patroness of the subscription in Great Britain. Subscriptions may be paid to the secretary of the Liverpool School of Tropical Medicine, B 10 Exchange Buildings, Liverpool, England.

So many excellent and most practical and convincing evidences of the possibility of the extermination of malaria are now culminating that it is obvious not only that with a certain expenditure of money the disease can be wiped out in a country like Greece, but that in our own territory the question is simply one of funds and an enlightened public spirit.

L. O. Howard.

THE CONVOCATION WEEK MEETINGS OF SCIENTIFIC SOCIETIES.

The American Association for the Advancement of Science and the national scientific societies named below will meet in New York City during convocation week, beginning on December 27, 1906.

American Association for the Advancement of Science.—December 27–January 1. Retiring president, Professor C. M. Woodward, Washington University, St. Louis, Mo.; president-elect, Professor W. H. Welch, The Johns Hopkins University, Baltimore, Md.; permanent secretary, Dr. L. O. Howard, Cosmos Club, Washington, D. C.; general secretary, Dr. John F. Hayford, U. S. Coast and Geodetic Survey, Washington, D. C.; secretary of the council, President F. W. McNair, Houghton, Mich.

Local Executive Committee.—J. J. Stevenson, chairman, C. C. Adams, Charles Baskerville, Franz Boas, N. L. Britton, H. C. Bumpus, Chas. A. Conant, Simon Flexner, Wm. J. Gies, Wm. Hallock, Alex. C. Humphreys, G. S. Huntington, Edward Kasner, Henry F. Osborn, C. L. Poor, Clifford Richardson, E. B. Wilson, Frederick J. E. Woodbridge, J. McKeen Cattell, secretary.

Section A, Mathematics and Astronomy.—Vice-president, Professor Edward Kasner, Columbia University; secretary, Professor L. G. Weld, University of Iowa, Iowa City, Iowa.

Section B, Physics.—Vice-president, Professor W. C. Sabine, Harvard University; secretary, Professor Dayton C. Miller, Case School of Applied Science, Cleveland, Ohio.

Section C, Chemistry.—Vice-president, Mr. Clifford Richardson, New York City; secretary, Professor Charles L. Parsons, New Hampshire College of Agriculture, Durham, N. H.

Section D, Mechanical Science and Engineering.—Vice-president, Mr. W. R. Warner, Cleveland, O.; secretary, Professor Wm. T. Magruder, Ohio State University, Columbus, Ohio.

Section E, Geology and Geography.—Vice-president, Dr. A. C. Lane, Lansing, Mich.; secretary, Dr. Edmund O. Hovey, American Museum of Natural History, New York, N. Y.

Section F, Zoology.—Vice-president, Professor E. G. Conklin, University of Pennsylvania; secretary, Professor C. Judson Herrick, Denison University, Granville, Ohio.

Section G, Botany.—Vice-president Dr. D. T. MacDougal, Washington, D. C.; secretary, Professor F. E. Lloyd, Desert Botanical Laboratory, Tucson, Arizona.

Section H, Anthropology.—Vice-president, Professor Hugo Münsterberg, Harvard University; secretary, George H. Pepper, American Museum of Natural History.

Section I, Social and Economic Science.—Mr. Chas. A. Conant, New York City; secretary, Dr. J. F. Crowell, Bureau of Statistics, Washington, D. C.

Section K, Physiology and Experimental Medicine.—Vice-president, Dr. Simon Flexner, The Rockefeller Institute for Medical Research; secretary, Dr. Wm. J. Gies, College of Physicians and Surgeons, Columbia University, New York City.

The American Society of Naturalists.—December 28. President, Professor William James, Harvard University; secretary, Professor W. E. Castle, Harvard University.

The Astronomical and Astrophysical Society of America.—December 27. President, Professor E. C. Pickering, Harvard College Observatory; secre-