NOTE.—Since the above was written, Dr. Howard informs me that Mr. C. L. Marlatt sailed for Japan on March 5th, his mission being to collect and forward such natural enemies of the San José scale as he may find in that country.

F. M. W.

CURRENT NOTES ON METEOROLOGY.

CLIMATE OF ARGENTINA.

ONE of the most important publications on climatology issued in recent years is buried in the second census of the Argentine Republic (Buenos Aires, 1898. Tomo I. Cuarta Parte. *El Clima de la República Argentina*, por Gualterio G. Davis. Pp. 259–381). This monograph is printed with a mass of other material in the volumes of the Argentine Census. No reprints of it have been struck off and it has so far practically escaped notice. Mr. Walter G. Davis, who is well known as the Director of the Argentine Meteorological Office, has in this report given an admirable presentation of the chief climatic features of Argentina, and has included a series of isothermal, isobaric and isohyetal charts which are of unusual interest. The interest of Argentina from a climatological standpoint is chiefly due to the great extent of that country from north to south. On the north it extends just beyond the Tropic of Capricorn; on the south it reaches latitude 55°. The differences in the temperature and rainfall conditions over this extended territory are naturally very striking, and profoundly affect the natural products of the Republic and the occupations of its inhabitants. All the important climatologic elements are tabulated and discussed, and many excellent graphic representations are given, showing the correlations between the various elements at certain selected stations. But the most important matter in the report is the series of charts showing the distribution of temperature, pressure and rainfall. The data used are the latest, the most complete and the best obtainable. There are isothermal charts for spring, summer, autumn, winter and for the year (reduced to sea-level and without reduction to sea-level); isobaric and wind charts for the seasons and for the year, and a mean annual rainfall chart. These charts show, for the first time, the distribution of these various elements over the southern portion of South America, in detail, and on the basis of reliable data. The extraordinary decrease of pressure to the southward is perhaps the most striking feature shown on these charts. In each season, as well as for the year, the isobars in the southern part of the Argentine run closely parallel, almost due east and west. Mr. Davis's report is altogether an extremely valuable piece of work, which should certainly be reprinted and made generally available for the use of students of climatology.

MONTHLY WEATHER REVIEW.

THE November number of the *Monthly Weather Review* is particularly strong in papers dealing with climatological subjects. W. H. Alexander, Observer of the Weather Bureau on the island of St. Kitts, contributes an article on the 'Rainfall of the Island of St. Kitts, W. I.,' in which the effects of topography upon the amount of precipitation are clearly brought out. 'The Climate of Spokane, Wash.,' is discussed by Charles Stewart on the basis of eight years' records. A. G. McAdie contributes another paper on 'Fog Studies on Mount Tamalpais' (Cal.), which is illustrated by four excellent half-tones, the original photographs having been taken from the U. S. Weather Bureau Observatory on Mt. Tamalpais. The Section Directors of Colorado, Idaho, Montana, New Mexico, Utah and Wyoming discuss the question of 'The Water Supply for the Season of 1900 as Depending on Snowfall.'

NOTES.

THE *Monthly Review of the Iowa Weather and Crop Service* for December contains a paper on 'Climatology of Iowa,' by J. R. Sage, read before the State Horticultural Society, Dec. 13, 1900, and a discussion of the 'Losses by Hailstorms in 1900.' A table prepared by the officials of the Farmers' Mutual Hail Insurance Association shows that an aggregate of 2,202 farms, in 64 counties, suffered damage to the amount of over $140,000.

THE *Meteorologische Zeitschrift* for December contains an excellent brief summary, by Exner, of recent contributions to the study of atmos-

pheric electricity. A bibliography accompanies the article (Ueber neuere Untersuchungen auf dem Gebiete der atmosphärischen Elektricität). R. DEC. WARD.

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*YELLOW FEVER.**

1. Sufficient search reveals the presence of a fine small bacillus in the organs of all fatal cases of yellow fever. We have found it in each of the fourteen cadavers examined for the purpose. In diameter the bacillus somewhat recalls that of the influenza bacillus; seen in the tissues; it is about 4 μ in length.

2. This bacillus has been found in kidney, in spleen, in mesenteric portal and axillary † lymphatic glands, etc., taken from yellow fever cadavers directly after death. In the contents of the lower intestine apparently the same bacillus is found often in extraordinary preponderance over other micro-organisms. Preparations of the pieces of 'mucus,' which are usually, if not always, present in yellow fever stools, at times may almost present the appearance of 'pure culture.'

3. Preparations of the organs usually fail to show the presence of any other bacteria, whose absence is confirmed by the usual sterility of cultivation experiments.

4. It is probable that this same bacillus has been met with, but not recognized by three other observers. Dr. Sternberg ‡ has mentioned it; and he has also recorded the finding of similar organisms in material derived from Drs. Domingos Freire and Carmona y Valle; but he did not recognize its presence frequently, probably on account of the employment of insufficiently stringent staining technique.

5. It is probable that recognition has not been previously accorded to this bacillus by reason of the difficulty with which it takes up stains (especially methylene-blue), and by reason of the difficulty of establishing growths on artificial media.

6. The most successful staining reagent is carbolic fuchsin solution (Ziehl), diluted with 5-per-cent. phenol solution (to prevent accidental contamination during the long staining period) immersion for several hours, followed by differentiation in weak acetic acid. Two hours staining period may fail to reveal bacilli, which appear after 12 to 18 hours. The bacilli in the stools are often of greater length than those in the tissues, and they may stain rather more easily; naturally the same is true of cultures.

7. Since the bacilli are small and comparatively few in numbers they are difficult to find. To facilitate matters at our last two necropsies (14th and 15th) a method of sedimentation has been adopted. A considerable quantity of organ juice is emulsified with antiseptic solutions, minute precautions against contamination and for control being taken; the emulsion is shaken from time to time and allowed to settle. The method is successful and may form a ready means of preserving bacteria-containing material for future study. The best fluid for the purpose has yet to be worked out; hitherto normal saline with about one-fifth per cent. sublimate has been employed.

8. Pure growths of these bacilli are not obtained in ordinary aërobic and anaërobic culture tubes.

9. Some pure cultures have been obtained by placing whole mesenteric glands (cut out by means of the thermo-cautery) into broth under strict hydrogen atmosphere. Investigations into the necessary constitution of culture media for successful cultivation are in progress.

10. Much search was made for parasites of the nature of protozoa. We conclude that yellow fever is not due to this class of parasite. Our examinations were made on very fresh organ juices, blood, etc., taken at various stages of the disease, with and without centrifugalisation,* and on specimens fixed and stained in appropriate ways. We may add that we have sometimes examined the organs in a fresh state under the microscope within half an hour after death.

11. The endeavor to prove a man-to-man

* Abstract of interim report by Herbert E. Durham and (the late) Walter Myers to the Liverpool School of Tropical Medicine.

† We find these constantly enlarged and much injected, though whether this is specific we are not able to say.

‡ *Report on Etiology and Prevention of Yellow Fever*, 1890.

* We have found this sometimes useful in examining the blood of ague patients.