

but not fully described until 1863, when Johnson obtained another specimen in that locality. Two other specimens have since been found at the surface (near the island of Dominica and on the Lehave Bank). The *Challenger* took another with the trawl at a depth of 1,500 fathoms in the mid-Atlantic.

Chiasmodon is remarkable for its large mouth and distensible stomach, enabling it to swallow fishes larger than itself. For most of the foregoing specimens, naturalists are indebted to the inability of the fish to digest what it swallows, resulting in its death and appearance at the surface.

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THE SAN JOSÉ SCALE PROBLEM AS COMPARED WITH THE ORANGE SCALE PROBLEM.

I WAS much interested in the communication of Professor Kellogg in the issue of *SCIENCE* for March 8, 1901. Of course the practical value of Mr. Kuwana's investigations is in the increased probability of our being able to import from Japan the natural enemies of the San José scale, and thus control the pest here, as was done in case of the *Icerya*. It is, therefore, of interest to see where we now stand in the matter of information, on which to base a second experiment in importing into this country parasitic enemies of scale insects. I copy the following lines from Professor Kellogg's communication:

* * * "It the [San José scale] is attacked by several enemies, Mr. Kuwana personally finding one chalcid, three lady-bird beetles and one moth, the larva of which feeds on the scale. Of these enemies the chalcid fly and one of the lady-bird beetles are everywhere common, and are effective checks to the increase of the scale. It is probable that the comparatively little injury produced by the scale in Japan, widespread as it is, is due to the presence of these natural enemies." * * *

By the side of this information may be placed the following, extracted from the Adelaide, South Australia 'Garden and Field' of November, 1887, by the late Mr. Frazer S. Crawford, who, from first to last, gave such efficient aid in bringing about the introduction of the *Vedalia* lady beetle that suppressed the Orange scale in California.

* * * "We have a few species of Coccinellidæ

about Adelaide, but they are not very plentiful, and although one or more species attacks the *Icerya*, yet they are not very effective in keeping them under, as the following experiment proves. Three months ago I put in a glass bottle a small branch of a gooseberry tree, on which some forty or fifty adult *Iceryas* were clustered. On examining them subsequently I discovered two lady-bird larvæ, which have lived to the present time feasting on the *Icerya*, evidently contented with their quarters; but at the present time there are likewise a great number of young larvæ, lately hatched, running about, thus showing that the work of destruction has been very slow, and that even under such favorable circumstances the coccinellæ larvæ cannot cope with the productive power of the *Icerya*. Strange to say, a similar twig, covered with about the same number of adult females, was about the same date placed in a lemon tree, and a fortnight back every vestige of *Icerya* had disappeared. This clearance was gradual, but what has caused it I am at a loss to say." * * *

It must be remembered that this was written one year prior to Mr. Keoheles starting for Australia on his first trip. It will thus be seen that Mr. Kuwana has thrown a flood of light upon this problem which I can only look upon as very similar to the one in which *Icerya* was involved, and afterwards so effectually solved. As I read of the conditions of the San José scale in Japan, as relating to numbers and effect, it seemed to coincide exactly with the mental picture that I could not banish from me when I went over some infested nursery stock two or three years ago, just received direct from Japan. While I had practically nothing to do with the introduction of the *Vedalia*, I did examine many orange groves about Adelaide, South Australia, for the *Icerya* and found a similar condition—only here and there a solitary individual, at most two or three together.

We can make a *defensive* fight against the San José scale with whale oil soap, petroleum, the axe and fire, in fact we must do so, in order to save our orchards from ruin; but we shall never be able by these measures to do more than check the pest. If we ever expect to do more than this we must make an *offensive* fight and with natural enemies brought from the country where they are found doing their work and holding this pest perpetually below the danger line in point of numbers.

F. M. WEBSTER.

WOOSTER, OHIO, March 12, 1901.

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-