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diminish in number and size on the caudal pedicle. *Colors*—Body and head orange, paler below; a very few irregularly scattered black spots on the body; lips brown; dorsal, anal and caudal fins with the outer half dusky; pectorals orange at the base, pale yellow on the outer margin, with a black median band, broader superiorly; gill-opening black, with an occasional milk-white spot; nasal papillæ and tips of the body spines black.

The species described above belongs to Section ii. B. of Dr. Gunthers' Catalogue, it measures ten and three-fourths inches, and was obtained in the Shoalhaven District.

ON A FRESH WATER ALGA AT WEST MAITLAND WATERWORKS.

By T. Whitelegge.

Geological Survey Branch,
31st July, 1890.

The Acting Curator, Australian Museum.

Sir,—I have already forwarded to you a sample of the minute vegetable organism, which has of late spread with such alarming rapidity through the main reservoir and the settling tanks at the West Maitland Waterworks.

The engineer in charge, Mr. Nicholson, informed me that he was obliged to keep men constantly employed in removing this vegetable growth, as unless kept constantly in check it chokes the supply pipes and obstructs the percolation of water through the filter beds. The plant appears to me, upon microscopic examination, to be a variety of fresh-water Alga, but as I am quite unable to offer any suggestions as to the best means for its eradication, I ventured to forward you the samples of this Alga, in the hope perhaps that you might consider the matter of sufficient importance to have a thorough investigation made to determine (1) the nature of the Alga, and (2) the best specifics for checking or entirely preventing its growth. Mr. Nicholson, the engineer in charge of the Waterworks at West Maitland, would be pleased to furnish any details you may require with regard to the occurrence of the Alga.

The discovery of an efficient remedy for this pest would be a great public benefit.

I have the honor to be, Sir,

Your Obedient Servant,
(Signed) T. W. E. David,
Actg. Geol. Surveyor in charge.

5th August, 1890.

Gentlemen, —I have the honor to transmit Progress Report by Mr. Whitelegge on Algæ received from the Geological Survey Department, and handed to him for examination, and to recommend that it be published in the "Records," and a copy forwarded to the Department.

I have the honor to be, Gentlemen,

Your Obedient Servant,

Ed. P. Ramsay, Curator.

To the Trustees of the Australian Museum.

Australian Museum,

4th August, 1890.

To the Curator.

Sir,—I have the honor to report that some time ago I received from the Acting Curator a bottle containing a green unicellular Alga, obtained by Mr. David, the Acting Government Geologist, from the Maitland Waterworks, with instructions from the former to send in a Progress Report for the information of the Trustees.

It appears that this particular Alga exists at certain seasons in such numbers as to seriously interfere with the pumping of the water, which it would probably render unpalatable, if not unfit for consumption.

The plants are exceedingly small, somewhat ovoid in shape, and of a light pea-green colour. When found in large numbers they give off a very unpleasant and fœtid odor, like that of many other plants rich in protoplasm, such as Nitella and Chara. The plant is evidently closely allied to, if not identical with *Chlamydomonas pulvisculus* of Ehrenberg, but until the various stages of its life-history are known, it would be unsafe to give a definite opinion as to its specific identity. From what I have seen of the same plant near Sydney, it passses some weeks in a free swimming condition, afterwards it loses its cilia and rises to the surface of the water, forming a thick scum of green powder. This phase evidently represents one of the resting stages of the plant. When found in this condition it seems to repel the water and appears quite dry ; by the action of the wind it is blown to the sides of the dam, where it often accumulates to a depth of several inches. It is probable, that before the plants resume active growth again, a kind of drying process is necessary, and that they rest on the mud until the ensuing rainy season.

Without a thorough knowledge of the conditions under which the Alga occurs in the Maitland district, it is difficult to say what steps should be taken with a view to its destruction. Under the circumstances I can only make a few suggestions which might, if carried out, tend to reduce its numbers.

In the first place it is a well known fact that the Rotifera or Wheel-animaculæ feed on small unicellular Algæ such as the one in question. The Unio or Fresh-water Mussel might also be tried, its introduction would not be injurious to the water supply. But I consider the best plan would be to take advantage of the resting stage of the plant, and engage a staff of men to skim the surface of the water. With suitable wire gauze frames vast quantities might be collected and destroyed. If this method were adopted for several seasons in succession the organism might ultimately be eradicated. The following are a few of the more important works in which this Alga is dealt with :—

Chlamydomonas pulvisculus, Ehrenberg; Die Infusions thierchen, 1838, p. 64.

Chlamydomonas pulvisculus, Pritchard ; Infusoria, 1861, p. 521, pl. 18, f. 40, 51 – 54.

Chlamydomonas pulvisculus, Cooke ; British Freshwater Algæ, 1882–4, p. 56, pl. 21, f. 3.

Chlamydomonas pulvisculus, Bennett & Murray ; Handbook of Cryptogamic Botany, 1889, pp. 186, 299, 300, 409, 417, 419.

I have the honor to be,

Your Obedient Servant,

THOMAS WHITELEGGE.

SPECIMENS OBTAINED ON A DREDGING TRIP IN PORT JACKSON, SATURDAY, 30TH MAY, 1890.

As an instance of the very extensive Marine Fauna of Port Jackson, the following list of the various species obtained in one day's dredging is given. The specimens have been determined