On this side the water flows by the Severn and the Acheron to the mighty Clarence River. The encircling mountains, reaching four to five thousand feet are mostly bare and stony though the steep sheltered valleys beyond the Wairau carry ragged patches of dark beech forest. The rolling tussocky Tarndale plain, obviously the floor of a prehistoric glacier, lies about 3,000 feet above sea level and stretches several miles in each direction. There are some half dozen tarns of different sizes, all dark and peaty in their depths and much frequented by black swans and noisy paradise ducks.

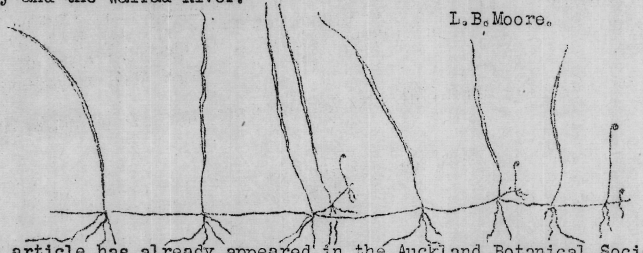
Imagine a clear cold steely sky reflected in the still water of one of the smaller tarns. The bordering tawny tussock adds some warmth of colour, and a group of cattle, wading and drinking in a little bay, completes the picture.

Shallowing very gradually to its edge, the water of the tarn carries a surprising quantity of flotsam, bright green uprooted water-plants that contrast strongly with the dark bottom of peaty earth. From this half-stranded fringe of greenery, at the approaching footstep, inch-long, semi-transparent fish dart out in hundreds and make for deeper water.

Aquatic plants are often neglected by collectors, but here the first glance shows some aristocrats that are not to be passed by. There is some sturdy Myriophyllum (M. elatinoides), but the great bulk is Isoetes! The tufted rush-like plants have quill-shaped leaves averaging perhaps six inches long. The swollen leaf bases are conspicuously white and even a rough bowie knife dissection shows that each contains an oval spora sac. Notwithstanding their appearance, these plants are more nearly related to ferns and lycopods than they are to rushes and sedges. They have turned out to be Isoetes alpinus.

Also in the "drift" is a smaller sedge-like plant. It might be a non-flowering Scirpus, but as we may not pass this way again, it is worth taking a handful to look at more closely. The handful gets its label, dries off in the pack, and when the trip is over, is put aside to await that elusive "leisure hour". When the final tidying-up comes, the shrivelled little scrap looks so pitiful that it is almost thrown out as hopeless - but it might be worth one quick lookover. A drop or two of water will help in the unravelling -- and so it does! The first thing the lens shows is a young leaf tip curled like a watch-spring. That means it must be Pilularia -- that unfernlike water-fern that every student knows about, and so few people ever collect. And this is how it looks when it floats loose from the bottom of the little lakes at Tarndale between Travellers' Valley and the Wairau River.

L. B. Moore.



(This article has already appeared in the Auckland Botanical Society Quarterly News Sheet for June, 1945. We hope to have a contribution from Auckland in our next issue.)

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BOTANIZING IN SOUTH WEST OTAGO.

Dr. Oliver's talk on 16th April was an account of a trip to the Homer region during last summer. He showed us a large number of very beautiful lantern slides, and brought along also a representative set of herbarium specimens.

A diagram showed by transverse section the relations of the Cleddau valley on the west and the Homer valley on the east, separated by a mighty wall of granite now pierced by the Homer tunnel at a level of about 3000 ft. The valleys here have all been formed by glacier action and have as common features the snow field reaching the valley lip, walls formed of vertical cliffs and, at the base of these, steep talus slopes two to three hundred feet high. The almost level valley floor where the river flows is formed of boulders that fill the

bottom of the U shaped valley, and provide rapid drainage of surface water. Rainfall is heavy and rivers may rise 3-4 feet in a night. Figures given for annual rainfall were 230" at Marion Camp on the Homer side and 250" at Milford at the mouth of the Cleddau, but the Meteorological Office has a record of 380" in one year at Homer itself. Every day avalanches fall from the snow field down the cliff bringing debris to the talus slope below. Near the crest of the range, snow-covered during Dr. Oliver's visit, is the sparse alpine vegetation, at mid-levels, where it is not too steep, tussocks flourish, on the talus slopes there is scrub, and the valley floor carries forest dominated by one sole tree species, silver beech (N.menziesii). The interior of the forest near its upper limit is very wet and mossy with abundance of filmy ferns, Astelia and lichens. Six deer have been known in the Homer valley. Hares are present as well. On the Cleddau side one hare (thought to have gone through the tunnel) was reported. The vegetation is still relatively little damaged.

The slides showed us first the Wilderness in the dry tussock country east of Lake Te Anau. This sharply bounded area, some hundreds of acres in extent, lies within the terrace system of the Mararoa River. Its most striking feature is low growing Dacrydium bidwillii in bushes 6-10 feet high and up to 20 feet across. Dr. Oliver considers that the peculiar vegetation has developed as the result of wet conditions caused by the tributary stream that flows, at some seasons, through the Wilderness to the main river.

At Monkey Flat we had our first taste of real Homer vegetation, in a picture of low globular bushes of Hebe of several species, with flowering Celmisias peeping out between. The tussock plants, the scrub of the talus slopes, Dracophyllum fiordense in the Cleddau valley, and a considerable number of the 13 species of Celmisia were shown in general and detailed pictures. Special mention must be made of one photograph taken by Mr. Salmon, a really satisfying study of Ranunculus lyallii, a plant that has been responsible probably for more wasted film than any other in the flora.

On the flatter top of Key Summit on the Livingston range we saw typical bog plants -- Oreobolus, Donatia, Phyllachne, Drosera, and, on the drier knobs, straggling bushes of Dacrydium biforms.

Notes can be given on a few only of the many species discussed: - Chrysobactrom so large that it might be mistaken for the C.rossii of the Sub-antarctic Islands; a gummy Celmisia once confused with the coastal C. lindsayi but now placed in C. bonplandii has a trailling stem a foot or more long; C. hectori with small neat grey leaves was a mass of flowers amongst rocks; Olearia operina from the shores of Milford Sound; a puzzling Olearia hybrid, possibly O.ilicifolia x O.moschata; Hebe subalpina, described as a ball of white flowers; from Milford Sound a fixed form of Coprosma propinqua with very big leaves; from Homer a Coprosma that in forest forms a slender shrub 6' tall, in scrub is prostrate and only reaches 1', and is more scrubby still on rock, would be called C. astoni in the bush form, but perhaps is too near to C.cuneata of the Auckland Is.; Coprosma rugosa at Milford, instead of being a hard shrub becomes a weeping tree 12-15' tall; Anisotome intermedia with its large heads of white flowers is conspicuous at Dale Point, Milford Sound; the little bog plant Actinotus, an aberrent member of the Umbelliferae differs from the Tasmanian A.suffocatus and should be called A.novae-Zealandiae.

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BACTERIOLOGY AND PUBLIC HEALTH.

Talk by Mr. J.M. Sutherland of the Pathology Laboratory, Wellington Hospital, 19.3.45.

To illustrate the relation of bacteriology to public health Mr. Sutherland chose the Salmonella group of organisms that cause such troubles as typhoid fever and food poisoning.

The Salmonella group is particularly dreaded amongst military forces and is of national importance in India, the Pacific Islands, the Mediterranean, Africa, Turkey, Europe and America. As yet no chemotherapeutic agents, such as the sulpha drugs and penicillin, have been found effective against them on a scale that is practical.

In a typical case the patient consults a physician who diagnoses the trouble and isolates the patient. The bacteriologist has then to isolate and