sits at the centre of this star, like a small, brown, papery, puff-ball, with a tiny, conical, starshaped opening at the top.
(I would be grateful to receive collections of any fungi from members who may find them.)

Greta B. Cone.

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SEAWEED RESEARCH.

On April 19th at the invitation of the Wellington Branch of the Royal Society of New Zealand, members heard a lecture by the Swedish algologist Dr. Tore Levring. Dr. Levring, who is Assistant Professor at the University of Gothenburg, is one of the most active and well known seaweed researchers in the world. His interest and ability in physiology were shown in his lecture on "Submarine Daylight and Photosynthesis in Marine Algae" but he is equally concerned with the systematic and geographical problems in this group. A year's collecting trip to Australia and New Zealand, with a grant from the Swedish Government, will enable him to amass much material to compare with the classical Australasian specimens in Sweden, and with other southern circum-polar specimens that he has already worked on. In New Zealand he and Mrs. Levring collected about Russell, Auckland, Wellington, Lyttelton and Dunedin, and he lectured to students in the four main centres.

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TROPICAL MANGROVE VEGETATION.

(Notes of Mr. McCann's Talk on March 15th.)

The word MANGROVE tends to embrace all plants growing in swampy muddy flats between high and low tides. Here plants have adapted themselves in various ways to an existence in saline slush, poor in oxygen. The mangroves form a biological unit of ecological and physiological interest.

The mangrove formation includes plants belonging to widely different families, although in New Zealand we tend to think only of the one species that dominates our mangrove swamps. Some of these families are:- Rhizophoraceae, the so-called true mangroves; Lythraceae; Combretaceae; Verbenaceae; Meliaceae; Myrsinaceae; Rubiaceae; Acanthaceae; Leguminaceae; Gramineae; Cyperaceae; Compositae; Salvadoraceae; Chenopodiaceae; Euphorbiaceae; Convolvulaceae; Asclepiadaceae; Ficoidae; Palmae; Apocynaceae. Some of these are rather members of the border-line flora between the mangrove and the terrestrial floras.

A brief description was given of a typical Indian mangrove swamp of the Bombay Presidency. Here on the seaward side is a protecting screen of trees or shrubs of Avicennia alba. Behind this is a mixture of woody plants of some nine genera, including Avicennia officinalis, Rhizophora, and a Derris related to that from which derris dust is obtained. On slightly higher ground are grasses and sedges and inshore still other plants, with further additions if there are patches where more sand is mixed with the mud.

The Rhizophoraceae are represented by five species in Bombay. While the fruit is still on the tree, an enormous radicle develops, sometimes attaining a length of two feet in R. mucronata, and half that length in Ceriops and Kandelia. Carallia has a red fleshy fruit, distributed by birds. The early development of the radicle is believed to be a means of anchoring the seedling in the mud, as it drops javelin-wise into the slush. In Rhizophora the entire fruit often falls, but if the seedling is without pericarp it floats vertically, owing to the enlargement of the distal portion of the radicle which weighs down the point and allows it to jab into the mud as the tide ebbs.
Most of the Rhizophoraceae produce stilt roots. In R. mucronata the base looks like a giant spider with multitudinous legs. Pneumatophores (breathing roots) are not produced, but numerous large lenticels appear on exposed roots.

In Lythraceae the genus Sonneratia is remarkable for large pneumatophores, attaining sometimes a length of nearly a couple of feet, and two inches diameter at the base.

In Verbenaceae is Avicennia, the only mangrove tree represented in New Zealand. The pneumatophores are comparatively small and slender, but very numerous. These plants are continuously cut for tanning. The two species are both deciduous or partly so in Bombay. The seedlings have well developed cotyledons before they leave the "cradle", and falling during the rains, are tossed up along the shores.

In Myrsinaceae is Aegiceras majus, in which the seedling often hangs suspended from the fruit until it drops or is blown off. They are carried about the swamp by tides.

In Acanthaceae, Acanthus ilicifolius has prickly leaves, showy blue flowers and fruits that float.

Besides flowering plants there are some algae typical of mangrove swamps and during cold weather the Bombay shores are beautifully draped in various forms.

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HUTT FERNERY AND JUBILEE PARK JUNE 5TH. 1948.

Ferns! There seemed to be thousands of them when we entered the fernery under the guidance of Mr. Rawson and Mr. Snow, their guardian. And although there may not have been thousands of plants growing there in moist profusion, we were told certainly that there were 23 genera, 76 species, and 9 varieties, which seemed no mean number. The first to meet the eye was Todea barbara from North Auckland. Leptopteris hymenophylloides and L. superba (Prince of Wales fern) were there in abundance; that L. superba grows slowly was shown by one small plant, three years old, which had about fifteen fronds, none more than six inches long. Marattia fraxinea (king fern) made an outstanding show. Tree ferns were represented by the ponga (Cyathea dealbata), soft Hemitelia smithii, harsh Dicksonia squarrosa, and a young Dicksonia fibrosa with its fibrous trunk a few inches high. Other ferns noticed were Hymenophyllum australe with its frilled wing, H. pulcherrimum with flat wing, Trichomanes reniforme (kidney fern), Polystichum richardi, Dryopteris pennigera and Blechnum lanceolatum. Reminiscent of a visit to bush near Levin were Blechnum patersoni and a handsome bank of parataniwha (Elatostema rugosum).

From the fernery we climbed the hill where many native shrubs had been planted on the grassy slopes. Especially noticeable was the great growth of mamaku (Cyathea medullaris) in the gullies, where presumably the bush had been burnt and the mamaku had been one of the few surviving species. Abundant seeds were seen on tarata (Pittosporum eugenioides) and other species of Pittosporum.

Leaving the magnificent view of harbour and valley we turned back to the bush where the fungus lovers found much of interest; a scarlet puff ball, little chrome yellow toadstools, the "elbow-bending" fungus, and the bird's nest fungus, some specimens with the lid still on, and others with the lid off showing the spore-bearing bodies lying like miniature eggs in a nest. Other plants of interest were a very large titoki (Alectryon excelsum), a kawakawa (Macropiper excelsum) showing its flowering spikes, the bright orange capsules of native passion fruit (Tetrapathaea tetrandra) gleaming against their dark glossy background, and the beautiful wax-like flowers, greenish white, of the kohekohe (Dysoxylum spectabile).

I. M. Morice.