GRAMINEÆ.

Digitaria sanguinalis, Scop.
Anthoxanthum odoratum, Linn. (Sweet-scented Vernal Grass.)
Phalaris canariensis, Linn. (Canary Grass.)
Alopecurus pratensis, Linn. (Meadow Fox-tail.)
Phelum pratense, Linn. (Cat's-tail Grass.)
Agrostis australis, Linn. (Bent Grass.)
vulgaris, With. (Fine Bent Grass.)
alba, Linn. (Marsh Bent Grass.)
Aira caryophylla, Linn. (Hair Grass.)
Glyceria fluitans, Br. (Floating Sweet Grass.)
Holcus lanatus, Linn. (Soft Grass.)
mollis, Linn. (Kirk.)
Poa pratensis, Linn. (Smooth Meadow Grass.)
trivialis, Linn. (Roughish Meadow Grass.)
nemoralis, Linn. (Wood Meadow Grass.)
annua, Linn. (Annual Meadow Grass.)
Eragrostis brownii, Kunth. (No common name.)
Briza maxima, Linn. (Quaking Grass.)
minor, Linn. (Quaking Grass.)
Dactylis glomerata, Linn. (Cocksfoot Grass.)
Cynosurus cristatus, Linn. (Dog's-tail Grass.)
Festuca myurus, Smith. (Barren Fescue Grass.)
var. *sciuroides*. (Barren Fescue Grass.)
Bromus sterilis, Linn. (Barren Brome Grass.)
racemosus, Linn. (Smooth Brome Grass.)
mollis, Linn. (Soft Brome Grass,)
Ceratochloa unioloides, P. de Beauv. (Prairie Grass.)
Avena pratensis, Linn. (Narrow-leaved Oat Grass.)
Hordeum murinum, Linn. (Wall Barley.)
Lolium perrenne, Linn. (Rye Grass.)
var. *multiflorum*. (Rye Grass.)
var. *uniflorum*. (Rye Grass.)
Cynodon dactylon, Pers. (Dog's-tooth or Doab Grass.)
Stenotaphrum glabrum, Trinius. (Buffalo Grass.)

Critical Notes on certain Species of Plants doubtfully indigenous to Kawau.

By T. KIRK, F.L.S.

Viola filicaulis, Hook., fil. The most northern *habitat* known, and quite unexpected.

Colobanthus billardieri, Fenzl. This is extremely rare north of the Waikato; at least I never gathered it in Auckland district.

Montia fontana, Linn. Doubtful. The nearest *habitat* for this plant is fully 250 miles further south in the Taupo country.

Potentilla anserina, Linn. The same remarks apply, and additionally it has not been previously found north of Auckland Isthmus.

Metrosideros albiflora, Banks and Sol. Quite unexpected at so low an altitude in the north, as anything to be found on the Kawau does not occur at Cape Colville and Manaia under 1,500 feet at least.

Eryngium vesiculosum, Labill. Not known in an indigenous state north of the East Cape. I have seen it cultivated at Matakana.

Lomaria elongata, Blume, and *Lomaria alpina*, Spreng. Certainly not indigenous to Kawau.

Lomaria banksii, Hook., fil. Extremely rare and local north of Waikato.

Doodia caudata, Br. Doubtfully indigenous in Kawau.

Asplenium umbrosum, J. Sm. Doubtfully indigenous in Kawau.

Scirpus triqueter, Linn. On my last visit to Hokianga, May and June, 1876, I made special search in that locality, the Wairoa, Kaihu, Bay of Islands, etc., for this plant, but without success. It is extremely rare in the Auckland district; the most northern *habitat* known to me being Shortland. I do not think *Juncus lamprocarpus* occurs north of the Wellington district. It certainly would not be found on Kawau unless it also occurred on the adjacent islands or the mainland, from all of which it is absent.

Galium tenuicaule, A. Cunn. I doubt the occurrence of this plant north of the Auckland Isthmus.

Craspedia fimbriata, D.C. Certainly not indigenous on Kawau.

Gnaphalium filicaule, Hook., fil. Certainly not indigenous on Kawau.

Erechtites prenanthoides, D.C. Not found on adjacent mainland or outlying islands.

Prasophyllum colensoi, Hook., fil. Not found on adjacent mainland or outlying islands.

Juncus vaginatus, Br. Is this not mistaken for some form of *J. australis*, Br.? The *J. vaginatus* of my Great Barrier list is certainly nothing more than an open-panicled form of *J. australis*. Still, true *J. vaginatus* ocurs on Motutapu, where I think it attains its northern limit.

Juncus novæ zealandiæ, Hook., fil. Certainly not indigenous on Kawau.

Isolepus aucklandica, Hook., fil. Certainly not indigenous on Kawau.

Gahnia procera, Forst. (Query? *G. paciflora*, Kirk, MS., is plentiful in Kawau.)

Uncinia cæspitosa, Boott. Query?

rubra, Boott. Certainly not indigenous on Kawau.

Deschampsia cæspitosa, Pal. Certainly not indigenous on Kawau.

Festuca duriuscula, L. Certainly not indigenous on Kawau.

Hymenophyllum minimum, A. Rich. Certainly not indigenous on Kawau.

bivalve, Swartz. Some form of *H. multifidum*, Swartz, has been mistaken for *H. bivalve*, which does not occur, even at Cape Colville, under 2,000 feet altitude.

Note.—[I am indebted to Mr. Kirk, who is well acquainted with the botany of the Auckland district, for several additional species collected by him on Kawau Island not found by myself there. They are distinguished in the lists by the addition of Mr. Kirk's name.—J. B.]

Art. LXXIV.—*On the Root-stock of* Marattia fraxinea, *Smith.*

By John Buchanan, F.L.S.

[*Read before the Wellington Philosophical Society, 29th August, 1877.*]

The root-stock, or rhizome of *Marattia*, is described by Hooker, in the "Flora of New Zealand," as "a large-rounded, hard, fleshy mass, as large as the head," and, in the "Handbook of the New Zealand Flora," as "a large tuberous rhizome." Again, De Vriese and Harting, in their "Illustrated Monograph of Ferns," published at Leyden, in 1853, describe it as "a succulent irregularly-shaped tuberous mass upon which the stems are articulated."

As no additional information is given in the more recent accessible work on Ferns, "Species Filicum of Hooker and Baker," I have been induced to place before the Society the result of observations made on the New Zealand species of this genus *Marattia fraxinea*, Sm., as to its method of reproduction by the root, which may add to our knowledge on this subject. The rhizome, or root-stock of the New Zealand species, is composed of an irregular agglomerated mass of thick fleshy scales, each scale being formed by the enlargement of a stipe base, the stipe separating by an articulation above the swelling, after the frond has performed its functions. The articulated surface of the scale shows a scar mark much resembling the imprint of a horse-hoof.

Such a root-stock approaches the scaly bulb more in structure than a fern rhizome, but without a central mass round which the scales might be arranged in order.

The continued addition of new scales outwards and upwards often raises the rhizome above the surface of the ground, but the frond-buds of those scales only which are in contact with the soil throw out independent roots.

This form of root-stock may therefore be named a scaly sub-ariel rhizome, without internodes.