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AUSTRALASIAN HERBARIUM NEWS.

A journal for the interchange of information  
among the systematic botanists of Australia  
and New Zealand.

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## THE IMPACT OF MAN ON THE AUSTRALIAN FLORA.

It is natural for a botanist visiting another country for the first time to make comparisons with his homeland. In so doing, one is impressed by the magnitude and extent of the changes taking place in the Australian flora due to man's actions, changes due to agriculture with its attendant plant immigrants, to the advent of new grazing animals, including the rabbit, and to the greater frequency of serious bushfires.

The flora in Britain has reached a state of dynamic equilibrium with the operations of mankind. While it is true that a few weeds recently introduced from abroad have spread widely, they have not provided any serious problems. The rabbit has been with us for some centuries and although regarded as an unmitigated pest by foresters, it has never-the-less become integrated into the general scheme, being kept in place by trapping, poisoning and predators. If we cast a glance backward in time, it is evident that the settlement of the British Isles by mankind has had a profound effect on the flora, but the changes have been rather of the nature of readjustments of the balance between different types of plant community than of the integration of alien floral elements. Moreover, such plants as became naturalised came from floras having a similar aspect to that they were invading and there is no evidence of incongruity.

The Australian aboriginal does not appear to have had any very marked effect upon the flora of the continent. He can have brought few, if any, plants with him, but probably wrought some changes by his custom of burning the bush to drive game. Certain grassy areas in Tasmania seem to have originated in this way and the grassy plains on the basalt west of Melbourne may have developed under burning from savannah woodland. By contrast, the white man has had a profound effect upon the flora. Large areas have been cleared of their original vegetation and the rate of clearing gathers speed as the population increases and modern machinery is brought into use. In some areas, such as the Wimmera, scarcely a vestige remains of the original flora. The breaking up of the soil for agriculture is accompanied by the introduction of alien crop plants and their attendant weeds. The mere breaking of the soil for any purpose favours the spread of these aliens, adapted as they are to ruderal conditions. They spread unfettered by the pests and diseases that help to keep them in check in their native habitats. Competition must be less intense in the more open communities of Australia than in the closed communities to which many weeds are accustomed. There may be also a release from the inhibition of antibiotic substances secreted by the roots of former competitors. Such factors, coupled with a favourable climate, account for the phenomenal spread of so many weeds in Australia. Prickly pear and skeleton weed are well known examples. The wild sage, Salvia verbenaca, covers many acres in close formation in Victoria; in England, where it is native, it occurs sparingly on limestone soils. I have seen the spotted thistle, Silybum marianum, on alluvial flats in Victoria forming a dense thicket ten feet high with individual stems close on 3 ins. diameter and completely exterminating the native flora. Most of these weeds are herbaceous and contrast strongly with the characteristic sclerophyll vegetation of Australia. The incongruity of the introductions is even more striking among the trees. Leafless deciduous trees in winter appear indecently naked against the eucalypts and heavily canopied pines look out of place at any season. So diverse are these floristic elements that centuries can scarce suffice to mask their alien character.

The grazing of sheep and cattle extend man's influence on the flora to the mountain tops and into the low rainfall areas unsuited for agriculture. The rabbit goes out into the desert and to the limit of plant life. The grazing of all three is more intensive than that of the original fauna. The sheep bites close, but the rabbit in times of scarcity digs up and eats the roots as well, thus eliminating any chance of regeneration. It is the worst offender in eating seedlings and barking young plants. These habits, coupled with the effects of burrowing and scratching in starting soil erosion, more especially in times of drought, make the rabbit the worst enemy of man and flora. The economic loss due to rabbits is stupendous, its effects on the native flora have been devastating. How many plant species it has extinguished in the semi-arid areas will never be known -- probably a considerable number. The grazing of domestic animals affects the flora in two ways. Primarily selective feeding eliminates palatable species long before an area is seriously overgrazed. The secondary effect is due to trampling. The animals tend to follow regular tracks and they have their gathering places. Tracks and lairs are pounded to dust in dry and poached in wet weather, locally destroying the plant cover. The erosion resulting may not be extensive on the lowlands but it is a menace on the mountain tops. In mountainous country cattle seeking water tread the bogs and by trampling destroy the bog mosses and other plants that, acting like a sponge, hold up the water to release it gradually to the plains below. Thus is started a cycle of erosion and aridity which concerns the welfare of every Australian. The top of Kosciusko has been bared in living memory. Other mountains are going the same way. The soil removed is silting up reservoirs and dams and is destroying alluvial flats in the lowlands by covering them with sterile sand. An extensive area near Orbost has been laid waste. The problem of grazing on high land and erosion is one that calls for immediate action. In Australia, where so much of the land area of the continent is subject to precarious or inadequate rainfall, the protection of the catchment areas is everyman's concern. Legislation is needed for the regulation of grazing in mountainous country and its elimination on important watersheds. The protection of watersheds would bring with it the conservation of the flora in the controlled areas.

It is clear that human activities have had, and continue to have in ever greater measure, a profound effect on the Australian flora. The botanist, with his specialised knowledge, is best qualified to assess the changes taking place before his eyes. The public generally is ill informed and not alive to the dangers involved. There is a need to arouse and maintain their interest in the native vegetation. The lack of up-to-date floras in all but one state of the Commonwealth and the scarcity of old floras is at present one of the biggest obstacles in achieving this end. Teachers and nature lovers become discouraged by the difficulties in naming their plants, interest wanes and their energies are directed into other channels. The state floras at present in preparation will be a major contribution towards developing an informed public opinion favourable to floral conservation.

R. MELVILLE.

ABBREVIATION OF THE NAME OF A FAMOUS AUSTRALIAN BOTANIST, BARON SIR FERDINAND  
JACOB HEINRICH von MUELLER (1825 - 1896).

Ferdinand von Mueller, who migrated to Australia in 1847 at the age of 22, must be the author of more Australian plant species than any other individual botanist, so the method of citing his name in formal taxonomic literature is of some moment to Australian botanists. The customary abbreviations are either 'F.v.M.' or 'F.Muell!'; the first is found in all of the standard Floras except Bentham's, while 'F.Muell.' occurs there and in some contemporary monographs in deference to the International Rules of Botanical Nomenclature.

The question became important to us when deciding which of these two forms to adopt for Part IV of the Second Edition of J.M. Black's "Flora of South Australia", now being published posthumously. Black used the form 'F.v.M.' in all the other parts of his Flora (now in print) and the only reason for being inconsistent and breaking away from this practice in the final Part is the rather weighty one that 'F.Muell.' is now specifically quoted as correct in the latest version of the International Code of Botanical Nomenclature, 1952, (Rec. 60A, q.v.). Briefly 'von', being a preliminary particle and the result of honouring Mueller with the title of Baron, should not be included in the abbreviated form.

On perusing another part of this 1952 Code (Appendix VI item 2) we see under "Examples of names written in full" that there are already at least five botanical authors named Mueller or Müller (two normally interchangeable forms.) Two of these men bear as their first christian name Ferdinand, and two others Franz, the fifth is mercifully not another F. Mueller but Johann (albeit known as "Fritz"!).

It is the writer's humble opinion, therefore, that we should cling to some really distinctive abbreviation for the name of our famous Baron, even at the cost of disregarding the International Botanical Recommendations, which after all are not so sacrosanct as the Rules themselves. Be it noted that this same Recommendation 60A has a final paragraph, "when it is a well-established custom to abridge a name in another manner, it is best to conform to it . . . .". Perhaps this might be successfully invoked in the present case if only that unfortunate example had not been chosen !

We had previously come to the conclusion that for the sake of consistency it would be better to continue with the form 'F.v.M.' in the final part of Black's 'Flora', perhaps with an apologetic remark in the preface. The writer will now use this form regularly in the conviction that it is the most practical and useful, being brief, distinctive and very well-known; this belief gives the courage to try and persuade others to do likewise. We Australian botanists, of course, can recognize our F.v.M. under almost any abbreviation - but even in Australia it occasionally proves to refer to another man !

In all seriousness, it is desirable for Australians to think it over and present a united front in this matter, though such action could never be retrospective. Any departure from the International Recommendations could, in this case, be 'legalised' by formally proposing a suitable alteration to the

Code in time for the 8th International Botanical Congress in Paris, July 1954, and having it accepted.

REFERENCE.

WILLIS, Margaret. By their fruits. A life of Ferdinand von Mueller. Sydney 1949.

ADDEN UM.

The writer has subsequently been reminded that this matter was discussed by the Australasian Systematic Botany Committee at the meeting in Hobart early in 1949, the concensus of opinion being in favour of using the form 'F.Muell.' (though the Third Edition of the Rules then current did not contain this particular example, which was added later.) The writer was absent from the meeting, but would at that date have agreed whole-heartedly with its conclusions; the article above represents a change of opinion based on the new facts quoted from the 1952 Code, and its chief purpose is to bring them to the serious notice of other botanists, not only in Australia.

C. M. EARDLEY,  
Adelaide.

NEWS AND NOTES ON CURRENT ACTIVITIES.

MELBOURNE, National Herbarium:

Increasing demands on our limited staff has left little time for research and publications. The amount of plant determinations has further increased to twelve thousand for the year and since specialists only send the specimens that they cannot identify, this is a major activity. Numerous parcels of specimens and books have been loaned to Overseas herbaria and particularly to workers on the Flora Malesiana.

Dr. Ronald Melville is again here after botanizing in Tasmania, New South Wales and Queensland. He has almost completed his collectings in Victoria having visited all the major collecting areas except the Murray basin which will also be visited before this is published. The final packing of his material consisting of well over 20,000 sheets will be commenced in May.

Mrs. Rica Erickson of Bolgart, West Australia was here furthering her researches into the genus Stylidium. Her colored drawings are excellent.

Visiting American botanists Mrs. Green and Mrs. Burkett were here and found time to give a public lecture. Unfortunately Mrs. Green broke her leg during her travels before arrival but in spite of that she has continued her tour to New Zealand, Japan and South America.

Other visiting botanists included Mr. C.A. Gardner, West Australia, Dr. N.C.W. Beadle, Messrs. W. Hartley, R.H. Anderson and N. Lothian and we were very pleased to have them.

The Australian & New Zealand Camellia Research Society has adopted a Constitution and members are being enrolled.

#### NEW GUINEA.

Mr. Womersley, Lae, writes --- "Dr. Hoogland of the C.S.I.R.O. Land Resource Survey is spending about three (3) months in Papua and New Guinea, working in association with myself. He wishes to familiarise himself with field conditions in the tropics before the full Land Resource Survey Unit commences work in the Northern Division of Papua, early in July. So far Dr. Hoogland and myself have made collecting trips to the Wau-Ediè Creek area and also to Nondugl. Many interesting collections have been made at Nondugl, including Gunnera and Coriaria.

At present Dr. Hoogland is visiting Mr. Brass and the Fourth Archbold Expedition, working in North Eastern Papua near Baniara.

Early in May we shall be proceeding to Keravat near Rabaul, where a complete enumeration of the ligneous flora of five acres of tropical rain forest will be made.

We hope to follow this with a return visit to the Nondugl area, this time to establish a collecting camp at about 8,000 ft. so that easy access may be obtained to the subalpine flora above 10,000 ft."

#### SYDNEY, National Herbarium:

A third edition of Mr. Anderson's book "Trees of New South Wales" is now in the press. The subject matter has been revised with particular attention to the distribution of species as much more detailed information has become available in recent years.

Miss Tindale has completed her report on the pteridophytes collected by the National Geographical Society of America and Commonwealth Government of Australia's Arnhem Land Expedition.

Mr. E.J. McBarron has completed an enumeration of species found in the Albury district of N.S.W. This will comprise Vol. 2 No. 2 of the Contributions from the National Herbarium of New South Wales. Vol. 2. No. 1. of this periodical is also in the press.

Visitors to the herbarium this year have included Professor A.J. Eames of Cornell University, Dr. R. Melville of the Royal Botanic Gardens, Kew, Dr. Hoogland of C.S.I.R.O., formerly of the Rijksherbarium, Leiden, Mr. C.W.E. Moore of C.S.I.R.O., Canberra, Rev. Cruttwell and Mr. N. Blood of New Guinea, Dr. G. Davis of New England University College, Armidale, Dr. I. Cookson of Melbourne University, Dr. W.M. Curtis of Hobart University and Miss C. Gillam of Brisbane Botanic Gardens.



SYDNEY, National Herbarium: (continued)

Last year Dr. F.A. Rodway presented some 10,000 specimens from his collection to the National Herbarium and a large proportion of these has now been incorporated in the general collection.

The collection of dried material in the herbarium has grown rapidly in recent years not only through the efforts of our seed-collector but also from collections by members of the staff, members of the public and workers in other botanical fields who have deposited their duplicate specimens with us. Our exchange of about 2,500 specimens per annum with overseas institutions has also enlarged our exotic herbarium considerably.

A number of specimens are at present on loan to other herbaria. These include material of Characeae, Potamogetonaceae (Stockholm), Nothofagus (Buenos Aires), Scleranthus (Wellington), Scleria, Hemichroa, Melaleuca (Brisbane), Anaranthus, Canarium, Sapotaceae (Leiden), Filicales, Oreomyrrhis (Berkley, Calif.), Pittosporum (St. Louis, Mo.), Eucalyptus (Perth), Veronica (Oxford), Aphanes, Alochemilla (Germany), Hymnodendron, Mniodendron, Braithwaitea (Bogor), Dawsonia, Hymenodon, Mesochaeta, Rhizogonium (Groningen), Solanum (Otago), Bulbine (Adelaide), Galium, Fissidens, Hydrocotyle (Melbourne), Selaginella (British Museum).

EIGHTH INTERNATIONAL BOTANICAL CONGRESS.

PARIS, FRANCE: 2nd-14th July, 1954.

The Congress will be held in Paris from Friday the 2nd to Wednesday the 14th of July 1954. Lodging will be guaranteed according to wishes, in the most comfortable conditions (big hotels) to the most modest (school dormitories.)

General excursions and special excursions will take place before and after the Congress. Before the Congress (from 15th to 20th of June) : North-Africa, Languedoc, Alsace, Lorraine, Nord, Brittany, Normandy, Vendée, Guyenne, Landes, Basque country and Paris area. During the Congress (2nd to 14th of July) : Paris and around Paris (Versailles, Fontainebleau, Chantilly, etc...). After the Congress (15th to 22nd of July) : from Paris to Nice via Burgundy, Jura, the Alps, Provence, Massif Central and the Pyrenees. A Post-Congress of 4 or 5 days will take place at Nice (22nd to 25th-26th of July); it will be followed by excursions to the Hyères Islands, Corsica, Tropical Africa (Senegal and Mauritania) and to equatorial Africa (Ivory Coast and Guinea.)

The Congress will include, besides the plenary sessions and the sessions on "various subjects", chiefly sessions devoted to limited subjects of actual interest discussed in the form of Symposia.

The stay in Paris and in Nice will include as well many other poles of attraction and interest. Numerous publications, in French and in English,

will be presented to the members before, during and after the Congress.

The probable amount of the subscription will be 5,000 francs (or £5 or 15 dollars), with a reduced fee for students and persons accompanying members.

LE SECRETAIRE GENERAL,  
Secretariat General du 8e  
Congres Int. de Botanique,  
292, Rue Saint-Martin,  
Paris (3e), France.

SECTION NOMENCLATURE.

Proposals regarding the International Code of Botanical Nomenclature (1952) must be submitted to the Rapporteur-General Dr. J. Lanjouw before 1 December 1953. All proposals can be published in Taxon. Botanists preparing proposals are earnestly requested to give them the form of the example which will be published in Taxon vol. 2 no. 2 (March 1953).

OFFICE OF THE RAPPORTEUR-GENERAL  
International Bureau for Plant  
Taxonomy and Nomenclature,  
Lange Nieuwstraat 106,  
Utrecht, Netherlands.

INTERNATIONAL CODE OF BOTANICAL NOMENCLATURE.

The International Code of Botanical Nomenclature adopted by the Seventh International Botanical Congress, Stockholm, July 1950 was published in September 1952 by the International Bureau for Plant Taxonomy and Nomenclature of the International Association for Plant Taxonomy, The Chronica Botanica Co.: Waltham, Mass, U.S.A., as Vol. 3, of Regnum Vegetabile.