REVIEWS

Wild Flowers of the Chalk. JOHN GILMOUR. Pp. 31, 16 colour plates by Irene Hawkins, one map. London and New York: The King Penguin Books, 1947; 2/6 net.

This is essentially an open-air book for any lover of English country and more especially for the amateur botanist.

Mr Gilmour possesses a rare gift for drawing a vivid picture in few lines and instantly transports the reader to whatever chalk-land is best known to him. What is more, the book is packed with information and few will not learn something from its wide field, ranging from a fragmentary introduction to ecology to the appetising property of Centaury.

Useful hints for identification are given and there is a short bibliography and a map of the chalk outcrop.

Mr Gilmour is to be congratulated on contributing such a delightful addition to the King Penguin series.

The plates are not uniformly good; the colour of *Hippocrepis* is too pale and that of *Asperula* too dark, the flowers of *Blackstonia* too small and one of the flowers of *Cephalanthera grandiflora* too open (Mr Gilmour himself states that it bears half-closed flowers, p. 21); but this is perhaps to be hypercritical.

Praise is due to Mr William Grimmond for his charming cover design and one wishes that the colour of the plates was as well reproduced.

I can confidently recommend this work as one of the best bargains among gift books, whether it be given for the purpose of arousing interest in the chalk Flora or to remind the initiated of a happy waste of Thyme.

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Flora of Alaska and Yukon. ERIC HULTÉN. *Lunds Universitets Årsskrift*, N.F. Avd. 2: Nrs. 1 of vols. 37-42, 1941-1946: (also *Lungl. Fisiog. Sällsk. Handl.*, N.F., Nrs. 1 of vols. 52-57). [$10\frac{1}{4}'' \times 7\frac{5}{8}''$.]

This valuable Flora is particularly interesting to students of the Arctic flora, as it embodies the results of critical work on many of the difficult groups, but it also contains much of interest to British botanists, since a considerable number of British species occur in the area. Some of these are there represented by distinct subspecies, which makes it desirable to re-examine the range of variation shown in the British Isles, and it may require the adoption of subspecific names for some of the British plants. In the first six parts (1066 pages) it has only reached the Rosales (on Dalla Torre & Harms' modification of the Englerian system of classification).

The author—of the Botanical Museum of Lund, Sweden—writes in English with but a few unusual expressions (e.g., " high-grown " where we should say " tall "), and the work is extremely well produced. Each

part concludes with series of uniform maps six to a page, showing the known distribution of all the species. Keys for identification are given at the beginning of each genus, and the text contains very many notes of systematic value under the various species. Full details of the records are given, as well as the general distribution. Most of the material examined is in the United States and Canada, but further material was borrowed from Berlin, Leningrad, Stockholm and Upsala, and there is also rich material in Lund. Unfortunately the historic arctic American material in London resulting from Parry's voyages has not been examined: as it well known, the British Museum is unable to send named material on loan. This possibly affects the nomenclature—which is open to some criticism in several ways, although useful nomenclatural notes are given, with citation of the type localities—for example, *Luzula hyperborea* R. Brown is ignored, although the type can be found. The International Rules of Nomenclature are ignored in several instances. Misidentifications and correct (valid) names are mingled in the synonymy in a way often difficult to disentangle. The author's subspecies are often only slender geographical races sometimes only differing " on an average " of the variation and partly indistinguishable from European specimens. One error surprising in a student of the Arctic Flora is the spelling " Spitzbergen " which should be Spitsbergen, the spelling of the original Dutch discoverers.

Although the northern coastal region is arctic, the southern coastal areas are forested (*Tsuga*, *Picea*, *Betula*) and many southern plants reach the area along the Pacific Coast. This is of interest because the comparison of glaciated Britain with Alaska is proper since both areas are on the west of continents in similar relations to the oceans and prevailing winds, whereas comparisons with Greenland are open to many objections. Considerable areas of the country were never covered by ice-sheets during the glacial period there, including most of the Yukon area and the high mountains of the Alaska range. Many endemics occur. The arctic coastal areas were also unglaciated during the Pleistocene except for heavy glaciation in the mountains.

Many British weeds are recorded: ten grasses, *Juncus bufonius*, some Rumices, Polygonums, Chenopodiums and *Atriplex*, *Stellaria media*, *Cerastium viscosum*, *Spergula arvensis* and *Spergularia rubra*, *Melandrium noctiflorum*, *Agrostemma Githago*, *Ranunculus acer* and *R. repens*, *Thlaspi arvense*, *Sisymbrium officinale*, *S. altissimum* and *S. orientale*, *Descurainia Sophia*, Brassicas and *Raphanus sativus*, *Capsella Bursa-pastoris* and *C. rubella*, *Camelina sativa*, *Neslia paniculata*, *Turritis glabra*, *Erysimum cheiranthoides* (thought to be indigenous as well as weed), and *Potentilla Anserina*.

Native British species include both our species of *Woodsia* and a sterile hybrid between them which should be looked for in Britain. *Dryopteris Linneana* has more dissected foliage than is usual in Europe. *Athyrium alpestre* is represented by a var. *americanum* which is considered a distinct species by Maxon: it has more dissected foliage on

an average. *Polypodium vulgare* is the subsp. *occidentale* with midrib of frond and segments pubescent with crisped grey hairs and with more acute teeth. *Botrychium lanceolatum* is scattered, usually occurring with *B. Lunaria*, which " seems to be the case also in other parts of W. America." Nineteen of our ferns are recorded, seven of our Equisetums, all of our Lycopodiaceae, but none of our *Isoetes*. *Zostera marina* occurs, and several of our Potamogetons, *Ruppia spiralis*, and both Triglochins. *Scheuchzeria palustris* is the ssp. *americana*, with longer follicles and somewhat longer style. Ten of our native grasses occur. Among them *Phleum alpinum* is as a var. *americanum* with taller growth, strongly inflated upper sheaths and shorter awns to the glumes, but some specimens seem inseparable from Scandinavian specimens.

Glyceria maxima (" *aquatica* " of British Floras) is considered as a circumpolar species with several geographical subspecies. Twenty of our Carices occur, including those recently added to our list by Heslop Harrison, viz., *C. capitata*, *C. bicolor*, and *C. glacialis*. *Luzula multiflora* occurs, but not *L. campestris*. *Tofieldia pusilla* is common and is accepted as identical with the European *T. borealis*. [*Veratrum album;* which is as near us as Lapland, Central Europe and the Pyrenees (and Spain), presumably reached there from Russia, where it is widespread.] The only British Orchids occurring are *Coeloglossum viride* (as the var. *bracteatum* [which is not identical with the bracteate British plants, being much more extreme and the normal form in Eastern Asia]), *Spiranthes Romanzoffiana*, and *Listera cordata*, the latter as var. *nephrophylla*, with on an average broader leaves with rounder apices, although some specimens are like European ones. In the Aleutian Islands, of which the author has also published a Flora, two types of *Listera cordata* occur, one with green flowers and another with dark purple flowers: [I think that both these occur in the British Isles]. *Goodyera repens* is as the var. *ophioides*, in which the veins of the leaves are bordered with tissue lacking chorophyll, as in all American specimens. Our *Corallorrhiza* and *Hammarbya* also occur.

Of the many Salices, only *S. reticulata* is British. *Myrica Gale* and *Betula nana* occur, the latter as ssp. *exilis*, differing only in its glandular less pubescent branches. The *Rumex Acetosa* is the spp. *alpestris*, an arctic-montane subspecies with broad leaf-sinus and the ochreae only occasionally somewhat lacerated. Their *Rumex Acetosella* is all ssp. *angiocarpus*. *R. domesticus*, *R. maritimus* (? introduced), and *Oxyria digyna* occur. *Polygonum amphibium* is as ssp. *laevimarginatum*, without the harsh bristly margins to the floating leaves, and with ochreae with herbaceous margin in land forms. *Polygonum Bistorta* is as ssp. *plumosum*, with smaller growth and cuneate-based lower leaves. *Polygonum viviparum* is one of the commonest species throughout the area. *Salicornia herbacea* and *Suaeda maritima* have a few records. *Montia lamprosperma* (type locality: Aleutian Islands) does not there root at the nodes as in Europe (*M. rivularis*) and as the rooting type is, in

America, only found in Western Newfoundland and New Brunswick, the author considers that the two forms are more distinct than usually supposed. *Honckenya peploides* and a ssp. *major* are separated, the latter characterised by its large growth with long stem, often rather narrow leaves and often several-flowered cymes: similar specimens occur in Scandinavia, "but on an average the difference is clear." Two forms of *Caltha palustris* are separated, the northern one being var. *arctica* with more radicant habit and more coarsely sinuately toothed leaves with more open sinus, but, as the author says, the *Caltha* races are closely related and not sharply "delimitated" [as is also found to be the case in Britain]. Typical *Ranunculus acer* is introduced, but there is a native var. *frigidus*, related to a Russian form. *Ranunculus sceleratus* is represented by a western American ssp. *multifidus*, which in addition to more dissected leaves (on an average) has the seeds without the usual transverse ridges and with only a circle of minute depressions on the sides of the seeds. Their *Thalictrum minus* is the Lapland ssp. *kemense*, with large fruits and small leaflets. *Subularia aquatica* is known from several localities. All Cochlearias are put under *C. officinalis* [but authorities have never been able to agree over the subdivision of this group!]. The *Cakile* is treated as *C. edentula* ssp. *californica*, one of three forms recognised as varieties by Fernald in *Rhodora* (1922: p. 21). [*C. edentula*, formerly considered a variety of *C. maritima*, is the only species recorded for Iceland by Á. Löve in his recent Flora of that island. The British plants need re-examination as plants with fruits of "*edentula*" are frequent in Britain, and were the only kind seen in the Outer Hebrides by me in 1947.] *Arabis hirsuta* is represented by two American subspecies: [it is possible that a study of the variation in Britain would reveal more than one form]. *Sedum Rosea*, in addition to one record, has two subspecies, the common ssp. *integrifolium*, with low habit, green or slightly glaucous leaves more evenly distributed on the stem, and purplish-black flowers with purplish-black filaments and yellow anthers, which is the prevailing type in E. Asia and W. America. Yellow-flowered specimens with yellow anthers also occur, though rarely, "which seem to belong to the main type of the species." The var. *frigidum* is more robust, with strongly glaucous leaves. [Certainly there are in Britain both colour forms!] The *Saxifraga caespitosa* is placed as ssp. *sileniflora*, which has the capsules ovoid, slightly constricted at the base of the sepals. [*Saxifraga tenuis* is treated as a variety of *S. nivalis*, occurring here and there within the range of *S. nivalis*, but to me it has always seemed to be a clear-cut arctic species, and in Britain it has never been found.] Four forms are distinguished under *Dryas octopetala*. *Sanguisorba officinalis* is restricted to unglaciated areas; its British distribution should be re-examined.

It is clear that intensive study of some of our British species is needed, and further parts of this interesting work will be welcomed when they appear. A. J. WILMOTT.