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Dr. J. P. Lotsy, Chefredacteur.

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Alle für die Redaction bestimmten Sendungen sind zu richten an: Redaction des Botanischen Centralblattes, Haarlem (Holland), Spaarne 17.

Meinecke, E. P., Spore measurements. (Science. n. s. XLII. p. 430—431. Sept. 24, 1915.)

Suggestion that not only the extremes be given but also the range of most frequent sizes — as "standard". Trelease.

Mogk, W., Untersuchungen über Korrelationen von Knospen und Sprossen. (Dissertat. 96 pp. Leipzig 1914.)

Das Wachstum von Zweigen diverser Laub- und Nadelbäume und von Keimpflanzen von Papilionaceen (*Vicia Faba, Phaseolus multiflorus, Lathyrus odoratus*) wird durch einen Gipsverband gehemmt. Hiebei zeigte es sich, dass die Gestaltung der Verzweigungssysteme namentlich von der Verteilung der einzelnen Triebe an der Hauptachse abhängt, ferner vom Entwicklungszustande der einzelnen Triebe. Wenn 2 Triebe voneinander abhängig sind, so bleibt dieses Verhältnis nicht labil. Das Wachstum der einzelnen Triebe wird durch die genannte Abhängigkeit ± induzierend bestimmt. Für den Grad der Induktion sind folgende Faktoren wichtig: der Ort, wo der korrelativ beeinflusste Spross an der Mutterachse eingefügt ist, die Zahl und Anordnung der Sprosse, die ihn beeinflussen, der Entwicklungszustand der verschiedenen Achsen, die Zeitdauer, während der er korrelativ beeinflusst wird. Die Induktion eines Sprosses erfolgt viel schneller und deutlicher, wenn er wächst, nicht wenn er auf mechanische Weise am Wachstume gehindert wird. Matouschek (Wien).

Bailey, I. W. and **E. W. Sinnott.** Investigations on the Phylogeny of the Angiosperms, II, Anatomical evidences of reduction in certain of the *Amentiferae*. (Botanical Gazette. LVIII. p. 36—60. Pl. III—V. 3 textfig. 1914.)

The best way to give an idea of the contents of this important paper is to copy the summary and conclusions published at the end of this paper.

The "aggregate" ray hypothesis developed by Jeffrey and amplified by a number of students working under his direction has an important bearing upon the phylogeny of the angiosperms, since it indicates that certain of the *Amentiferae* are in all probability the most primitive living representatives of the phylum. There appear to be serious objections to this hypothesis, however.

a. Objections to the "aggregate" ray hypothesis.

1. The phenomenon of chalazogamy, which was considered at first of great phylogenetic value, cannot, in view of later investigations, be considered a reliable criterion for determining the phylogenetic position of plants.

2. The occurrence of so-called "aggregate" rays in the tertiary does not appear to be significant, since "multiseriate" rays, which are considered to be a comparatively recent adaptation to the advent of a severe winter season and the consequent acquirement of the deciduous habit, are found in middle and upper cretaceous dicotyledons.

3. If "aggregate" and "compound" rays originated for the purpose of storing the assimilates descending from the persistent leaves of angiosperms in the warmer times of the Mesozoic and were later replaced by "multiseriate" rays as an adaptation to a period of refrigeration, we should hardly expect to find multiseriate rays well developed in families which have lived in tropical environments since ancient times.

4. The "aggregate" ray, which is comparatively infrequent, characterizes the obviously reduced xerophytic *Casuarinaceae,* and the temperate families *Betulaceae, Fagaceae,* and *Ericaceae.*

5. The "aggregate" ray hypothesis does not account for the development of "secondary" multiseriate rays nor for the origin of wide rays in the root.

6. The seedling evidence which has been advanced in favor of the origin of wide rays from congeries of uniseriate rays is invalidated by the occurrence of wide multiseriate rays in seedlings of oaks, and also in such supposedly conservative regions in this genus as the node, root, reproductive axis, and first annual ring.

b. "Aggregate" rays stages in the reduction and disintegration of wide multiseriate rays.

In the *Fagales* and *Casuarinaceae* there is a very complete series of forms in which the progressive reduction and disintegration of wide multiseriate rays can be traced in detail. During this process of reduction the wide rays appear usually at later and later stages in ontogeny, until they finally disappear. The so-called "aggregate" rays are stages in the disintegration of wide multiseriate rays. Stimulating types of growth and injury recall the wide rays in regions where they have been lost, and are frequently most effective in those regions which are supposed to be conservative, such as the first annual ring, root, node, and seedling. Stunted, suppressed, poorly nourished types of growth, and severe distorting injuries hasten the reduction and disintegration of the wide multiseriate

rays. In this process of reduction vestiges of the wide rays tend to be more persistent in the peduncle, root, and nodal regions.

c. The multiseriate ray a widened uniseriate ray.

The multiseriate ray does not appear to be of recent origin, since it is well developed in most tropical and temperate families and extends through the tertiary at least to the Middle Cretaceous. This type of ray structure originated in all probability by the gradual increase in width of the primitive uniseriate ray.

d. Phylogeny of the *Amentiferae.*

One character, of course, cannot be considered conclusive evidence for assuming that a plant or group of plants is "regressive" or reduced, since all characters will not be similarly affected by changes in the environment or physiological activity, but the reduction of wide rays in the *Fagales* indicates that this order, as well as the *Casuarinaceae,* has been subjected to a strong modifying influence. This fact, taken together with the occurrence of syncarpy, epigyny, abortive ovules, and vestiges of bisexual flowers and floral envelopes, emphasizes the importance of the frequently repeated suggestion, that the *Amentiferae,* instead of being the most primitive of angiosperms, are a group of specialized families, which have reached their present more or less simple structure through reduction from earlier and usually more complicated forms.

Jongmans.

Coulter, J. M. and **W. J. G. Land.** The origin of Monocotyledony. (Botanical Gazette. LVII. p. 509—519. Pl. 28, 29. 2 Textfig. 1914.)

The writers studied monocotyledonous and dicotyledonous seedlings of *Agapanthus umbellatus* L'Hér., from South Africa. The dicotyledonous condition is rare, only one specimen was found. On the writers' anatomical researches on these seedlings, on a comparison with *Sagittaria* and on the results, obtained in *Cyrtanthus sanguineus* by Miss Farrell, who found as developmental stages four cotyledons, two cotyledons and finally one large, the following conclusion is based.

In both Monocotyledons and Dicotyledons a peripheral cotyledonary zone gives rise to two or more growing points or primordia, and this is followed by a zonal development resulting in a cotyledonary ring or sheath of varying length. If both growing points continue to develop equally, the dicotyledonous condition is reached. If one of the growing points ceases to develop, the growth of the whole cotyledonary zone is associated with that of the other growing point, and the monocotyledonous condition is reached. In other words, monocotyledony is not the result of the fusion of two cotyledons, or of the suppression of one; but it is simply the continuation of one growing point on the cotyledonary ring, rather than a division of the growth between two growing points. In the same way polycotyledony is the appearance and continued development of more than two growing points on the cotyledonary ring. In fact, in *Cyrtanthus* four growing points appear at first,. which under certain conditions might result in four cotyledons. The whole situation has its parallel in sympetalous corollas, in which there is zonal development associated with three, four, or five separate growing points, which, continuing development, are recognized as petals.

It follows, that cotyledons are always lateral structures arising

from a peripheral cotyledonary zone at the top of a more or less massive proembryo. This reduces cotyledony in general to a common basis in origin, the number of cotyledons being a secondary feature. The constancy in the number of cotyledons in a great group is no more to be wondered at than a similar constancy in the number of petals developed by the petaliferous zone.

The authors believe that massive proembryos, as occur in *Agapanthus* represent the primitive condition of proembryos in Angiosperms, and that only from such a proembryo could the monocotyledonous and dicotyledonous conditions have differentiated. After this differentiation, the difference has become relatively fixed by the reduction of proembryos to filaments. While massive proembryos occur in all the three great divisions of Angiosperms, they are notably present among the *Ranales,* from which the monocotyledonous branch seems to have arisen; and they are also retained by many of the Monocotyledons, notably the *Arales* and *Liliales,* and in these groups one may expect to find occasional dicotyledony or even polycotyledony. Jongmans.

Bottomley, W. B., Some Accessory Factors in Plant Growth and Nutrition. (Proc. Roy. Soc. B. LXXXVIII. p. 237—247. 1914.)

The author reviews recent work on the subject of the presence of accessory factors in normal dietaries of man and animals. These substances are obtainable as phosphotungstic precipitates, and possibly belong to a new group of Nitrogenous compounds. They chiefly occur in plants and the investigation was to ascertain what part if any they play in the metabolism of the plant itself.

By treating peat with certain aerobic soil organisms it had been found that the bacterised peat contained in addition to the ordinary plant food constituents, a substance which stimulated growth in a remarkable manner and was possibly of the nature of an accessory food body. This substance proved to be soluble in water and alcohol and experiments shewed that it was absent from raw peat and present in bacterised peat as a result of the treatment. As the latter consists essentially in the production of soluble humates by bacterial action, tests were made to ascertain whether the chemical production of soluble humates would be equally effective. This was found not to be the case. The active substance is precipitated by phosphotungstic acid, and this fraction proved to be quite as effective as the original alcoholic extract of the peat. In order to determine how far the growth stimulant in bacterised peat resembled the "vitamines" of Furst, a further fractionation with silver was carried out. The dry substance obtained was added to the nutrient solution in which plants were grown and enabled them to utilise the food elements to a degree far in excess of those growing in a pure food solution.

Furst had demonstrated facts which indicated the possibility of the development during germination of special growth substances which enable the young embryos to utilise the food materials present in the seed. This may therefore be inhibited by the removal of the seed, as soon as possible after germination, and this would render the addition of such substances to the food solution much more marked. Wheat seedlings were treated thus and grown in pure food solution and in this plus the silver fraction of bacterised peat. After

50 days the percentage of increase in weight of the plants in the latter solution was 59.3 % as compared with — 10.9 % of those grown in the former solution.

The author infers from his work that during the bacterial decomposition of organic matter in the soil, accessory substances are formed, hence the beneficial effect on crops of farmyard and other organic manures.

Experiments are in progress to test the specific action of these accessory substances. W. B. Brierley (Kew).

Merrill, E. D., A simple method of making carbon leaf impressions. (Torreya. XV. p. 175—181. f. 1—3. Aug. 1915.)

Pressure with the fingers against paper over transfer "carbon-paper", overlaying the leaf to be figured. Trelease.

Pax, F. und **K. Hoffmann.** Prähistorische Pflanzen aus Schlesien und der Ober-Lausitz. (Engler, Botan. Jahrb. LII. 4—5. p. 346—353. 1915.)

Unter Verweis auf eine Arbeit von denselben Verfassern, Alte Kulturpflanzen aus Schlesien. [Engler, Botan. Jahrbücher, Bd. 50, Supplem. (1914) p. 593], werden aus Schlesien vorgeschichtliche Pflanzenreste von elf verschiedenen Fundorten besprochen. Es konnten folgende Nutzpflanzen bzw. Unkräuter festgestellt werden: *Triticum compactum* Host. *Fraxinus excelsior?* L., *Quercus* spec., *Pinus silvestris* L., *Spergula arvensis* L., *Panicum miliaceum?* L., *Pisum sativum var. microspermum* Pax, *Camelina sativa* (L.) Crantz [bisher nur aus Ungarn bekannt], *Agrostemma Githago* L., *Polygonum lapathifolium* L., *Polygonum convolvulus* L., *Chenopodium album* L. Die drei letzten Arten sind wichtig wegen ihres Stärkegehaltes. Da *Polygonum lapathifolium* L. in erheblicher Menge vorkam, so ist auch bei dieser Pflanze an regelmässigen Anbau zu denken. Dasselbe gilt wahrscheinlich auch für *Chenopodium album* L. Das allgemeine Bild ist dasselbe wie das von Striegau zur Hallstadtzeit.

In der Ober-Lausitz fand man bei Ostro hinter einer 6 m breiten und 4 m hohen Mauer aus Eichenstämmen einen ganzen Getreidespeicher mit vielen Centnern Vorrat aus der ältesten Eisenzeit (Hallstadtzeit). Es wurden bestimmt: Ungeschälte Hirze (wahrscheinlich *Panicum miliaceum* L.), *Camelina sativa* (L.) Crantz, *Triticum compactum* Host, *Hordeum sativum* L., *Secale cereale* L, *Lens esculenta var. microsperma* Heer, *Pisum sativum var. microspermum* Pax, *Vicia faba var. celtica* Heer, *Agrostemma Githago* L., *Echium vulgare, Vicia cracca* L., *Vicia tetrasperma* (L.) Mönch, *Barbarea vulgaris?* R. Br., *Bromus secalinus?* L., *Lolium perenne?* L., *Galium mollugo* L., *Cerastium* spec. *Agropyrum repens* (L.) P. Br., *Polygonum dumetorum* L., *Chenopodium album* L. und noch einige andere Samen von Ruderalpflanzen. Nagel.

Delf, E. M., The algal Vegetation of some ponds on Hampstead Heath. (The new Phytologist. XIV. p. 63—80. 3 figs. London 1915.)

An account of the contents of a series of eight ponds, connected with one another, on Wylde's Farm, Hampstead Heath. A table is given of the species observed in the whole series of ponds,

together with the number of occurrences noted between January 1912 and March 1914. The author finds that there is a well-marked periodicity in the occurrence of the majority of the algae in these ponds. The season of greatest diversity and abundance was from February to April or May in the years recorded. This corresponds to a period of variable rainfall, gradually ascending temperatures, increasing light intensity, and of comparatively slight development of animal life. As the temperature rises from May to July the algae become greatly diminished, and many forms altogether disappear until late in the following October or early November. In 1912 there was a secondary maximum in October and November, falling off again in December and January; but in 1913 there was a slight increase in December, and an apparently stationary condition in January prior to the early vernal maximum (January to March) which followed. The *Protococcales* and *Ulotrichales* are dominant somewhat prior to the *Conjugatae* and *Heterokontae,* the *Conjugatae* dominating every other form in April and May. One species of *Spirogyra* is described, which is apparently a summer form. Ethel S. Gepp.

Griffiths, B. M., On *Glaucocystis Nostochinearum* Stzigs. (Ann. Bot. XXIX. CXV. p. 423—432. 1 pl. July 1915.)

The author describes this alga as unicellular, solitary, occurring in *Sphagnum* bogs; ellipsoidal, 30—45 μ long by 18—25 μ wide, with a small polar internal thickening at each end, and an external equatorial thickening; cell-wall mainly of cellulose; chromoplast of strongly recurved and radiating blue-green bands, which break up during cell-division; 2 or 4 or 8 daughter-cells are produced within the mother-cell; nucleus 'open' during the resting stage, it is a spherical mass of delicate reticulate unstainable protoplasm, distinguished from the general cytoplasm by containing no metachromatin granules; it lies close against the cell-wall. During the division stage, the nucleus contracts, becomes coarsely reticulate, moves to the centre of the cell, and becomes stainable; it contains chromatin, and has a nuclear membrane. The metachromatin granules of the cytoplasm disappear; and the nuclear chromatin aggregates into a large karyosome. This divides by transverse fission; so too does the cytoplasm; the halves round off, and daughter-cell walls are formed.

Glaucocystis probably belongs to the *Cyanophyceae,* because of the 'open' nucleus, the tendency of cytoplasmic division to take place independently of nuclear division, and the presence of phycocyanin in the chromoplast. On the other hand, the very high differentiation of the nucleus in the dividing stage, the elaborate chromoplast to which the phycocyanin is confined, the formation of daughter-cells like those of *Oocystis,* and the cellulose wall, are features that separate the plant from all other *Cyanophyceae,* and probably justify its being placed in a special group of *Cyanophyceae.*
Ethel S. Gepp.

Grove, W. B., *Pleodorina illinoiensis* Kofoid in Britain. (The New Phytologist. XIV. p. 169—182. 11 figs. London 1915.)

In March 1915 the author collected *Pleodorina illinoiensis* in cart-ruts at Harborne near Birmingham. He describes in detail and figures the structure, movements and life-history of this alga. He compares the genus with *Eudorina* and *Pandorina,* and finds

the distinction between *Eudorina* and *Pleodorina* to be but slight so far as it relates to the difference in shape of the colonies and in size among the cells in the same colony. *Pleodorina* is an advance on *Eudorina* in the direction of *Volvox*, where the distinction between somatic and reproductive cells is strongly accentuated.

Ethel S. Gepp.

Narita, S., Notulae ad algas Japoniae. II. (Journ. Bot. IV. p. 212—216. London, July 1915.)

An enumeration of about thirty marine algae, with one novelty — *Caulerpa Okamurai* Web. f. nov. *minor*. He recognizes eight Japanese species of *Gelidium*. *Amphiroa nobilis* Kütz. and *A. dilatata* Lam. he regards as forms of *A. anceps*. Ethel S. Gepp.

West, G. S. and **C. B. Starkey.** A Contribution to the Cytology and Life-History of *Zygnema ericetorum* (Kütz.) Hansg., with some remarks on the genus *Zygogonium*. (The New Phytologist. XIV. p. 194—205. 5 figs. London 1915.)

In each cell of *Zygnema ericetorum* there is normally only one large axile chloroplast of indefinite outline. It is usually constricted in the middle and in some cases twisted. There are two large pyrenoids, one in each half of the chloroplast. The latter usually is more or less masked by numerous oil-globules. A low temperature causes the cell-wall to thicken, and cysts to be produced. Filaments of the aquatic form grow well in a 0.2 per cent. Knop's solution. Filaments of the terrestrial form when placed in water gradually fragment and become dissociated into short lengths of cells; which may, however, ultimately grow into long filaments. If placed in 0.1 per cent. Knop's solution, similar fragmentation occurs, but is longer delayed. When allowed to dry gradually, the filaments fragment into thick-walled "cysts".

The genus *Zygogonium* as founded by Kützing (1843) is untenable; and available evidence does not support the retention of *Zygogonium* on the basis put forward by De Bary (1858) and Wille (1909). Ethel S. Gepp.

Bailey, F. D., Powdery scab of potatoes in Oregon. (Science. n. s. XLII. p. 424—425. Sept. 24, 1915.)

Referring to *Spongospora*. Trelease.

Blodgett, F. M., Sweet pea powdery mildew. (Phytopathology. V. p. 237. Aug. 1915.)

Microsphaera Alni, on *Lathyrus*. Trelease.

Collins, J. F., The chestnut bark disease on freshly fallen nuts. (Phytopathology. V. p. 233—235. f. 1. Aug. 1915.)

Referring to *Endothia parasitica*. Trelease.

Graves, A. H., Root rot of coniferous seedlings. (Phytopathology. V. p. 213—217. f. 1—2. Aug. 1915.)

Ascribed to lack of oxygen in soil saturated with water.

Trelease.

Thompson, M. T., An illustrated catalogue of American insect galls. (Edited by E. P. Felt. Nassau, New York. 1915.)

A quarto of 116 pages with 21 plates comprising several hundred photographed illustrations: published and distributed by the Rhode Island Hospital Trust Company as executor under the will of the father of the author, himself deceased.

The plan of treatment is very convenient for the botanist who wishes promptly to ascertain the probable former of a gall that he encounters, for the Cynipid galls are arranged by host and keyed into comparatively small groups on obvious characters, — a supplemental list of galls of other causation being added. For the entomologist, an enumeration of the insects — with synonymy and hosts — is furnished. Trelease.

Molér, T., Ein Beitrag zur Kenntnis der Entbindung des durch Azotobacter fixierten Stickstoffes. (Botaniska Notiser 1915. 4. p. 163—179. Fig. und 1 Taf. In deutscher Sprache).

Eine neukonstruierter Kulturfiltrierapparat wird vom Verf. beschrieben, der es ermöglicht, die Stoffwechselprodukte aus Bakterienkulturen zu entfernen und für sich zu untersuchen. Da die wachstumshemmenden Stoffe entfernt und mit steriler frischer Nahrung ersetzt werden können, kann die Methode zu einer experimentellen Prüfung der Lebenstheorie Weismann's benutzt werden. Was *Azotobakter* anbelangt, so scheinen die allerdings noch nicht abgeschlossenen Untersuchungen diese Theorie zu bestätigen, d. h. die einzelligen Organismen sind unter angenommenen optimalen Bedingungen einer Entwicklung ins unendliche fähig. Es tritt kein Absterben ein, das den Abbau des Bakterieneiweisses zur Folge haben könnte. *Az. chroococcum* scheidet während seines Lebens keine löslichen N-Verbindungen aus und wird höchstens nach seinem Tode als N-Lieferant für andere Organismen, (höhere Pflanzen) in Betracht kommen. Die Zellen dieses Organismus die mit ihrem fixierten Stickstoff stark oekonomisieren, treten bei Nahrungsmangel in ein Ruhestadium ein. Dem Azotobakter-Eiweisse gegenüber bleiben proteolytische Enzyme bakteriellen Ursprungs (wie Pyocyanase) ganz unwirksam; die in Rohkulturen auftretenden löslichen N-Mengen sind sicherlich nicht durch eine solche Fermentwirkung zu erklären. In der Natur bei der Entbindung des Stickstoffs spielt das tierische Zwischenglied eine grosse Rolle. Denn: Es gibt Amoeben Arten, die das *Azot. chroococcum* sehr gern fressen, und man findet solche Arten in allen Erdproben, in denen das genannte Bakterium vorkommt. *Az. agile* und *Az. Wienlandii* scheiden, im Gegensatze zu der obigen Art, aber lösliche N-Verbindungen aus.

Matouschek (Wien).

Dixon, H. N., Ceylonese Mosses collected by the Rev. C. H. Binstead in 1913. (Journ. Bot. IV. p. 257—267; 289—297. 1 pl. London 1915.)

The material was collected in February and March of 1913, chiefly at Nuwara, Ellia and Pedrutalagala, yielding about 200 species, among which are the following novelties: *Trematodon* (*Gymnotrematodon*) *brevisetus* Dixon, *Microcampylopus subnanus* C.M. var. *elatus* Dixon, *Dicranodontium sparsum* Dixon, *Fissidens* (*Bryoidium*) *aberrans* Broth. & Dixon, *Macromitrium* (*Eumacromitrium* (*Leiostoma*) *assimile* Broth. & Dixon, *Bryum* (*Eubryum Doliolidium*

ceylonense Broth. & Dixon, *Philonotis nitida* Mitt. var. *rigidior* Dixon, *Camptochaete(?) thamnioides* Broth. & Dixon, *Acanthocladium ceylonense* Broth. & Dixon, *Taxithelium (Polystigma aptera) Binsteadii* Broth. & Dixon, *T. (Anastigma) isopterygioides* Dixon, *Vesicularia caloblasta* Broth. & Dixon. A. Gepp.

Hodgetts, W. J., Vegetative Production of Flattened Protonema in *Tetraphis pellucida.* (The New Phytologist. XIV. p. 43—49. London 1915.)

Flattened protonemata occur in *Sphagnum, Andreaea, Tetraphis, Tetradontium, Buxbaumia, Diphyscium.* But none of these mosses (except *Sphagnum*) have been recorded as producing a protonema vegetatively, as many other mosses do. The author has however in the case of *Tetraphis* growing under natural conditions observed the vegetative production of large flattened protonemata on the gametophyte. They were found in the leaf-axils of stems which, being decapitated, could not produce the normal terminal group of gemmae. Similar thalloid protonemata are normally developed from the germinating gemmae and spores of *Tetraphis.* A. Gepp.

Lett, H. W., Census Report on the Mosses of Ireland. (Proc. Roy. Irish Ac. XXXII. section B. 7. p. 65—166. Dublin, September 1915.)

The author gives a list of all the Irish mosses, recording under each the provinces in which it has been found, adding the actual locality, date, collector's name, and a reference to the publication or herbarium upon which the record is based. The provinces adopted are those defined by R. Ll. Praeger. The Census is preceded by a report on the progress of bryology in Ireland, in which short biographical notices of the collectors of, and writers on, Irish mosses are given. A bibliography is supplied, and a list of the 118 species and varieties added to the flora since the publication of David Moore's Synopsis (1872). A. Gepp.

O'Keeffe, L., Structure and Development of *Targionia hypophylla.* (The New Phytologist. XIV. p. 105—116. 2 figs. London 1915.)

1. The thallus of *Targionia hypophylla* grows by means of a single apical cell, from which segments are cut dorsally, ventrally, and on either side. The air-chambers arise by splitting between the epidermal cells, the split extending from the surface inwards through the entire depth of the epidermis; the crack then partly closes owing to the turgor of the bounding cells; the young chamber then extends during the general growth of the thallus tissue, but still remains closed until the concentric cell-rings are produced by division around the pore, whereupon the pore opens and gradually increases in area until the general growth of the thallus ceases. The membrane-like rim of the pore is the innermost ring of the guard-cells, the cavity of these cells being almost obliterated by thickening of the walls. 2. The antheridial receptacle may arise on special short disc-like branches of limited growth, or on ordinary thallus branches. The centrifugal arrangement of the antheridia, and the scattered distribution of the ventral scales on the disc-like receptacle, indicate that the latter represent a condensed branch

system, in which dichotomy occurs rapidly, and the several growing-points formed are of short-lived activity. 3. The bivalved involucre developes simultaneously with the archegonial group, and represents the peripheral region of the archegonial surface, but its further growth, the formation of interlocking processes on its margin, and its closure until the extrusion of the capsule, are dependent on the occurrence of fertilization in one or more of the archegonia. 4. The young sporogonium does not show the octant stage usually regarded as characteristic of *Marchantiales,* but approaches the "*Jungermannia* type", a row of cells being formed by successive transverse divisions before the first longitudinal divisions occur. The spore mother cells and the elaters occur in approximately equal numbers, and are, irregularly mingled, but there is invariably a layer of elater-forming cells immediately within the single-layered capsule-wall, and these cells may either remain attached by their entire length to the inside of the capsule wall, or by one end only; in the former case making the wall two-layered in places, in the latter case forming fixed elaters. A. Gepp.

Stirton, J., Additional Mosses from Duncraig, West Ross-shire. (Trans. Proc. Bot. Soc. Edinburgh. Vol. XXVI. Part IV. p. 423—429. 1915.)

The author discusses five species of *Leptodontium* found in West Ross-shire. *L. flexifolium, L. recurvifolium* and *L. gemmascens* have been known for some years; but he is of opinion that the last-named species should be excluded from the group. *L. terrenum* was described by him in 1900; and now he adds a fifth species, new to science, *L. Rossii.* He also describes *Campylopus obtectus* n. sp., *Limneria* (gen. nov.) *viridula* n. sp., *Bryum intortulum. Limneria* approaches in some respects *Rhacomitrium* and *Campylostelium.* A. Gepp.

Watson, W., A Somerset Heath and its bryophytic Zonation. (The New Phytologist. XIV. p. 80—93. 7 figs. London, 1915.)

The author gives an account of a wet heath association on Chard Common, in which the dominant vascular plants are *Molinia caerulea, Erica tetralix* and *Myrica gale.* He provides plans and diagrams of the zones. Tracing the zonation of the vegetation from the wetter up to the drier zones, he finds subdivision to be necessary to denote the occurrence of the bryophytes; and he can distinguish seven zones, six of which are characterised by the presence of a particular species. 1. Zone of *Potamogeton polygonifolius.* 2. Three sub-zones: A. *Aneura pinguis* and *Pellia epiphylla;* B. *Hypnum scorpioides;* C. *Sphagnum cymbifolium.* 3. *Aneura multifida.* 4. Two sub zones: A. *Sphagnum subnitens;* B. *Hypnum intermedium.* 5. *Hypnum cuspidatum.* 6. *Brachythecium purum.* 7. *Hypnum cupressiforme var. ericetorum.* The respective associates found in these successive zones are detailed; and the formation and probable history of the Heath is discussed. A. Gepp.

Anonymus, Decades Kewenses. (Kew Bull. Misc. Inform. N⁰. 7. p. 344—350. 1915.)

Polygala palustris, Lace (Burma), *Triumfetta benguetensis,* Sprague (Philippine Islands), *Acronychia Barberi,* Gamble (S. India), *Aglaia*

Barberi, Gamble (India), *Agl. Bourdillonii,* Gamble (India), *Agl. canarensis,* Gamble (India), *Ribus maximowiczii* Batalin var. *floribundum,* Jesson (W. China), *Stenocarpha,* Blake gen. nov., *S. filipes,* Blake, comb. nov. (Mexico), *Diospyros glandulosa,* Lace (Burma), *Arundinaria vagans,* Gamble. E. M. Jesson.

Anonymus. Diagnoses Africanae. LXIV. (Kew Bull. Musc. Inform. N⁰ 8. p. 386—389. 1915.)

Latin descriptions are given for the following plants, previously described in English in Dyer's Flora Capensis, Vol. V. sect. 2. 1915. p. 9—33. *Passerina Galpini,* Wright, *P. laniflora,* Wright, *P. rubra,* Wright, *Cryptadenia laxa,* Wright, *Struthiola epacridioides,* Wright, *S. Macowani,* Wright, *S. pondoensis,* Gilg en C. H. Wright, *S. congesta,* Wright, *S. cicatricosa,* Wright, *S. longifolia,* Wright. E. M. Jesson.

Blake, S. F., A new *Vaccinium* from Costa Rica. (Journ Bot LIII. 633. p. 271. Sept. 1915.)

The new species is *V. dissimile* (§ *Disterigma*); a plant which was distributed as *V. pachyphyllum* Hemsl. E. M. Jesson.

Blake, S. F., A revision of *Salmea* and some allied genera (Conclusion). (Journ. Bot. LIII. 632. p. 225—235. Aug. 1915.)

Under the new section: *Loxosiphon* the new combination *Notoptera curviflora* (R. Br.) and *N. brevipes* (Rob.) occur, also the new species *N. scabridula.* Similarly under the new section *Perigyne, N. tequilana* (Gray) comb. nov., *N. tequilana,* var. *genuina* var. nov. and var. *acuminata* (Wats.) comb. nov. *epalacea,* (Hemsl.) comb. nov. are to be found. The new species are: *Otopappus trinervis, O. microcephalus, O. Pringlei, O. glabratus* (Coult.). E. M. Jesson.

Blake, S. F., Two new *Hymenostephiums.* (Journ. Bot. LIII. 633. p. 268. Sept. 1915.)

The new species *H. pilosulum* is described from Oaxaca and Costa Rica and the new combination *H. cordatum* (= *Wedelia cordata,* Hook. et Arn., *W. subflexuosa,* Hook. et Arn., *Gymnolomia subflexuosa* (Hook. et Arn., B. et H. fil. ex. Hemsl.) is made. E. M. Jesson.

Britton, N. L., Studies of West Indian Plants. VI. (Bull. Torr Bot. Cl. XLII. p. 365—392. July 29. 1915.)

An analysis of the 23 Cuban species of *Coccolobis* etc., and containing as new:

Coccolobis woodfredensis, C. Cowellii, C. colomensis, C. Shaferi, C. benitensis, C. brevipes, Tabebnia Brooksiana, T. Shaferi, T. pachyphylla, T. trinitensis, T. calcicola, T. moaensis, T. pinetorum, T. arimaoensis, T. arenicola, T. geronensis, T. Curtissii, T. crassifolia, T. angustata, T. jamaicensis, T. actinophylla (*Tecoma actinophylla* Griseb.), *T. Sanvallei* (*Tec. sanguinea* Wright), *T. Buchii* (*Tec. Buchii* Urb.), *T. lepidota* (*Tec. lepidota* DC.), *T. Berterii* (*Tec. Berterii* DC.), *T. domingensis* (*Tec. domingensis* Urb.), *T. revoluta* (*Tec. revo-*

luta Urb.), *T. acrophylla* (*Tec. acrophylla* Urb.), *T. myrtifolia* (*Tec. myrtifolia* Griseb.), *T. platyantha* (*Tec. platyantha* Griseb.), *T. bahamensis* (*Tec. bahamensis* North.), *Anastraphia montana, A. Cowellii, A. attenuata, A. crassifolia, A. calcicola, A. parvifolia, A. Wilsoni, A. Shaferi, A. obtusifolia, A. Rosei, A. recurva, A. Comensis, Cyperus calcicola, Psilocarya portoricensis, Rhynchospora borinquensis, Cassia Clarendonensis, Purdiaea velutina* Britt. & Wils., *P. Shaferi* Britt. & Wils., *P. microphylla* Britt. & Wils., *Piriqueta cubensis* Britt. & Wils., *Rheedia Hessii, Mayepea cubensis* Wils., *Agalinis albida* Britt. & Pennell and *Jacaranda Cowellii* Britt. & Wils. Trelease.

Brown, N. E., *Sansevieria.* (Kew Bull. Misc. Inform. N⁰ 5. p. 185—261. 1915.)

In this monograph of the genus *Sansevieria* the following new species and varieties are described by the author: *S. Powelli, S. caulescens, S. suffruticosa, S. Phillipsiae, S. gracilis, S. rorida, S. robusta, S. deserti, S. varians, S. patens, S. Sordida, S. cylindrica,* Bojer var. *patula, S. burmanica, S. Dooneri, S. parva, S concinna, S. subtilis, S. nilotica,* Baker var. *obscura* and var. *Laurentii, S. metallica,* Gér. & Labr. var. *longituba* and var. *nyasica, S. Raffillii, S. Raffillii* var. *glauca, S. Kirkii.* E. M. Jesson.

Dyer-Thisleton, W. T., Flora Capensis. Vol. V Sect. ii. Part II. (p. 191. 1915.)

This part contains the conclusion of *Santalaceae* by A. W. Hill, the *Balanophoraceae* by C. H. Wright and the *Euphorbiaceae* by N. E. Brown, T. Hutchinson and D. Prain. Among the *Euphorbiaceae* the new species are as follows. The *Euphorbias* being described by N. E. Brown; *Elaeophorbia acuta,* N. E. Brown; *Euphorbia multifida, E. graveolens, E. albanica, E. ruscifolia, E. foliosa, E. artifolia, E. muraltioides, E. frutescens, E. spinea, E. chersina, E. indecora, E. cibdela, E. amarifontana, E. Rudolfii, E. perpera, E. corymbosa, E Angrae, E. rectirama, E. arrecta, E. caterviflora, E. Mundii, E. macella, E. hastisquama, E. gentilis, E. karroensis, E. Davyi, E. ramiglans, E. Ernesti, E. truncata, E. gatbergensis, E. passa, E. Flanagani, E. Franksiae, E. Woodii, E. discreta, E. Huttonae, E. brevirama, E. arida, E. decepta, E. rudis, E. inelegans, E. albertensis, E. brakdamensis, E. namaquensis, E. Braunsii, E. baliola, E. Bergeri, E. Marlothiana, E Muirii, E. tuberculatoides, E. Bolusii, E. Macowani, E. tugelensis, E. pubiglans, E. restituta, E. atrispina, E. alternicolor, E. captiosa, E. atrispina, E. valida, E. infausta, E. pyriformis, E. clavigera, E. enormis, Cleistanthus Schlechteri,* Hutchinson. E. M. Jesson.

Haumann-Merck, L., Étude phytogéographique de la région du Rio Negro inférieur. (An. Mus. Nat. Hist. Natur. Buenos Aïres. XXIV. p. 289—443. 19 Textfig. 1913.)

Zuerst werden die allgemeinen geographischen Charakterzüge des Gebietes erörtert. Die Coenobiosen alle aufzuzählen geht hier nicht an; 20 Pflanzenhabitus- und typische Landschaftsbilder in Photographie beleben hier sehr das Mitgeteilte.

Man kann für die südargentinisch-patagonische Florenregion

so recht studieren: *Gourliea decorticans, Larrea divaricata, Chuquiragua erinacea* als Charaktertypen der „Strauchsteppe"; *Adesmia canescens* auf den Küstendünen und anderseits die *Suaeda divaricata* (Jume) und die *Atriplex*-Arten (matorros) als die wichtigsten Vertreter der „Salitrales"-Gemeinschaft. — Die wichtigsten fazies-bestimmenden Familien sind: *Compositae* (92 Arten in 49 Genera) und die *Gramineen* (72 Species in 32 Genera). Es reihen sich an: die *Leguminosen, Chenopodiaceen, Cruciferen, Umbelliferen, Cyperaceen, Verbenaceen, Solanaceen, Caryophyllaceen, Malvaceen, Cactaceen* (letztere in 5 Gattungen mit 10 Arten). Es existiert ein deutlicher Konkurrenzkampf zwischen den krautartigen, besengestalteten *Compositen* und *Verbenen,* steppenliebenden Gräsern, *Chenopodien, Akazien*-Verwandten, je nachdem man die Espinalregion oder die eigentliche Pampasregion betrachtet. Das Werk enthält eine Menge Details; die Figuren sind insgesamt gelungen.

Matouschek (Wien).

Hole, R. S., A new species of Forest Grass. (Indian Forest Records. V. 6. p. 1—6. 1915.)

Spodiopogon Lacei, Hole is described from Burma. It is allied to *S. sagittifolius,* Rendle, but differs considerably in the more robust habit, the racemes consisting each of 3—9 spikelets, spathulate pedicels and glume II of sessile spikelet with 3—5 nerves only.

E. M. Jesson.

Hutchinson, T., New Tropical African species of *Ficus.* (Kew Bull. Misc. Inform. N⁰. 7. p. 313—344. 1915.)

The following are the species described: *F. golungensis, F. acutifolia, F. katagumica, F. kawuri, F. ingentoides, F. Buntingii, F. ugandensis, F. Gossweileri, F. rudens, F. maculosa, F. fasciculiflora, F. praticola, F. stipulifera, F. camptoneuroides, F. nyanzensis, F. namalalensis, F. ebelowensis, F. Rederi, F. mutantifolia, F. anomani, F. Dawli, F. clarencensis, F. kitubalu, F. mallotoides, F. Wakefieldii, F. glumosoides, F. asymmetrica, F. annobonensis, F. leonensis, F. aganophila, F. arcuato-nervata, F. brachypoda, F. Ledermannii, F. budduensis, F. zambesiaca, F. tettensis, F. pseudo-mangifera, F. mangiferoides, F. Kirkii, F. mildbraedii, F. Burretiana.*

E M. Jesson.

Lecomte, H., Deux *Elaeagnus* nouveaux de l'Indo-Chine. (Notulae Systematicae. III. p. 123—126. Avril 1915.)

Enumération des *Elaeagnus* indochinois, parmi lesquels deux espèces nouvelles: *E. laosensis* H. Lec., du Laos et *E. Bonii* H. Lec, du Toukin.

J. Offner.

Lecomte, H., Elaeagnacées de Chine et d'Indo-Chine. (Bull. Mus. Hist. Nat. XXI. Paris, 1915.)

Enumération des *Elaeagnus* chinois et indochinois de l'Herbier du Muséum de Paris, parmi lesquels se trouvent plusieurs variétés nouvelles. Tandis que le genre est abondamment représenté en Chine, il est confiné en Indochine dans les régions montagneuses élevées.

J. Offner.

Lecomte, H., *Heritiera annamensis,* sp. nov. (Notulae Systematicae. III. p. 3–6. 1 fig. Mai 1914.)

Heritiera annamensis H. Lec. se rapproche surtout d'*H. angustata* Pierre, et les fleurs mâles sont assez semblables dans les deux plantes; mais tandis que la première espèce présente dans la même inflorescence des fleurs de l'un et de l'autre sexe, celles-ci se trouvaient vraisemblablement séparées dans l'espèce de Pierre, dont les fleurs femelles sont inconnues. J. Offner.

Lecomte, H., Un nouveau *Trichoscypha* du Congo français. (Notulae Systematicae. III. p. 6—9. 1 fig. Mai 1914.)

Notes sur plusieurs *Trichoscypha* récoltés au Congo par Le Testu, parmi lesquels l'espèce nouvelle *T. Le Testui* H. Lec. J. Offner.

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†**Legré, L.,** Herbarisations dans les Basses-Alpes [annotées par L.-A. Dessalle]. Avec une préface de l'abbé A. Richaud. (Bull. trim. Soc. Scient. et Litt. des Basses-Alpes. XVI. p. 1—16, 103—113, 188—196, 263—268, 322—332, 357—386. Digue, 1914—1914.)

Cette publication posthume du botaniste de Marseille, mort en 1904, renferme les listes des plantes qu'il a récoltées au cours de ses nombreuses herborisations dans les Basses-Alpes, de 1886 à 1895. Les environs de Pierrerue et la montagne de Lure, dont la flore avait été encore peu étudiée, ont été spécialement explorés par l'auteur. Cependant Dessalle, qui a eu le soin de revoir et de publier les notes de Legré, montre qu'avant lui, Darluc, Elisée Reverchon et surtout le docteur S.-J. Honnorat avaient parcouru la montagne de Lure, mais que Legré ignorait leurs recherches, d'ailleurs restées en partie inédites. J. Offner.

Léveillé, H., Flora missionnaria asiatica. (Bull. Géogr. Bot. [XXV]. p. 13—26, 37—50. 1915.)

Toutes ces espèces nouvelles proviennent, sauf indication différente, du Yun-Nan: *Silene Mairei* Lév., *Triplostegia epilobiifolia* Lév., *Anaphalis Mairei* Lév., *Eupatorium Mairei* Lév., *Aster Costei* Lév., *A. Bodinieri* Lév., *A. Argyi* Lév., du Kiang-Sou, *Picris Mairei* Lév., *P. Blinii* Lév., *P. Bodinieri* Lév., *Petasites Mairei* Lév., *P. Vanioti* Lév., *Sonchus Mairei* Lév. (non *S. Mairei* Lév. in Fedde Repert. = *S. oleraceus* L.), *Senecio* (*Canalia*) *Moisoni* Lév. *S. Franchetianus* Lév., *S.* (*Ligularia*) *tongichouanensis* Lév., *S.* (*Lig.*) *Monbeigii* Lév., *S.* (*Lig.*) *trichopoda* Lév., *S.* (*Lig.*) *iochanensis* Lév., *S. Leclerii* Lév., *S. delphiniphyllus* Lév., *S. Lebrunei* Lév., *Saussurea Merinoi* Lév., *S. Leveilleana* Maire, *S. Vanioti* Lév., *S. Bodinieri* Lév., *Rhododendron crenatum* Lév., *R. tapilouense* Lév., *R. missionnarium* Lév., *R. Blinii* Lév, *Pieris Mairei* Lév., *Vaccinium Mairei* Lév., *Gentiana phyllopoda* Lév., *G. Mairei* Lév., *G. Bodinieri* Lév., *G. Blinii* Lév., *G. Reynieri* Lév., *Pleurogyne Vanioti* Lév., *Swertia Mairei* Lév., *S. albo-violacea* Lév., *Phyllanthus Mairei* Lév., *Ph. Franchetiana* Lév., *Hypericum centiflorum* Lév., *H. Mairei* Lév., *Boea rubicunda* Lév., *Oreocharis micrantha* Lév., *O. squamigera* Lév., *Petrocosmea Mairei* Lév., *Elsholtzia Mairei* Lév., *E. lampradena* Lév., *Ophiopogon*

filiformis Lév., *Peliosanthes Mairei* Lév., *Microrhamnus Mairei* Lév., *M. Franchetiana* Lév., *Aletris Mairei* Lév., *Lilium cupreum* Lév., *L. sempervivoideum* Lév., *Lloydia Mairei* Lév., *Polygonatum minutiflorum* Lév., *Smilax loupouensis* Lév., *S. Mairei* Lév., *S. castaneiflora* Lév., *Streptopus Mairei* Lév., *Veratrum Mairei* Lév., *Dianella Mairei* Lév., *Myrica Mairei* Lév., *Androsace Mairei* Lév., *Lysimachia Mairei* Lév., *Oreocharis Bodinieri* Lév., *Chelidonium Cavaleriei* Lév., du Kouy-Tchéou, *Scopolia Mairei* Lév., *Wikstroemia Hemsleyana* Lév., *Ligustrum Phillyrea* Lév., *Daphne Mairei* Lév., *D. Bodinieri* Lév., *D. Cavalerici* Lév., *D. Esquirolii* Lév., *D. salicina* Lév., *Anemone Geum* Lév., *A. bicolor* Lév., *Paeonia Mairei* Lév., *Cimicifuga Mairei* Lév., *Trollius saniculaefolius* Lév., *Saxifraga Blinii* Lév., *Spiraea Mairei* Lév., *S. microphylla* Lév., *S. atemnophylla* Lév., *S. holorhodantha* Lév., *Potentilla dolichopogon* Lév., *Cotoneaster Bodinieri* Lév., *C. Mairei* Lév., *Prunus odontocalyx* Lév., *P. myntacea* Lév., *P. Mairei* Lév., *P.* (*Padus*) *Vanioti* Lév., *Pirus* (*Cydonia*) *rufifolia* Lév., *Geum ranunculoides* Lév., *Rosa Lebrunei* Lév., *R. Blinii* Lév., *Mussaenda Mairei* Lév., *Ophiorrhiza violaceo-flammea* Lév., *Leptodermis motsouensis* Lév., *L. tongtchouanensis* Lév., *L. Chaneti* Lév., du Tché-Li, *Galium quinatum* Lév., *G. Blinii* Lév., *G. Esquirolii* Lév., *Lespedeza Pampaninii* Lév., *L. Blinii* Lév., *Sophora Mairei* Lév., *Crotalaria Mairei* Lév., *Caragana Komarovi* Lév., *Astragalus Mairei* Lév., *A. Bodinieri* Lév., *A. Esquirolii* Lév., *A. Cavalerici* Lév., *Erythrina Mairie* Lév., *Vicia Mairei* Lév., *V. coreana* Lév., de l'île Quelpaert. Noms nouveaux: *Elsholtzia lavandulaespica* Lév. (*Pogostemon lavandulaespica* Lév.), *Salvia kiaometiensis* Lév. (*S. Mairei* Lév.), *Atropanthe Mairei* Lév. (*Wahlenbergia Mairei* Lév.), *Anemarrhena Mairei* Lév. (*Ophiopogon Mairei* Lév.). J. Offner.

Lundström, E., Plantae in horto botanico Bergiano annis 1912—13 critice examinatae. [Beobachtungen und Studien bei den in den Jahren 1912—13 ausgeführten Pflanzenbestimmungen im botanischen Garten Bergielund]. (Acta Horti Bergiani. V. N^{0} 3. 121 pp. 8^{0}. 8 Taf. 51 Textbild. Stockholm 1914.)

In dieser Abhandlung werden folgende neue Arten, Varietäten und Hybriden beschrieben: *Iris distincta* E. Lundstr., *I. Thunbergii* E. Lundstr., *I. sibirica* L. × *I. Thunbergii* E. Lundstr. n. hybr. Lundstr.. *I. setosa* Pall. subsp. *pygmaea* E. Lundstr., *Rheum Wittrockii* E. Lundstr., *Thalictrum foetidum* L. × *T. majus* Murr. n. hybr. E. Lundstr., *T. spectabile* E. Lundstr. n. hybr., *Paeonia anomala* L. × *P. tenuifolia* L. nov. hybr. E. Lundstr., *Delphinium grandiflorum* L. var. *flavopunctatum* E. Lundstr. n. var., *Papaver alpinum* L. subsp. *puniceum* (v. Hayek) E. Lundstr. var. *fumarioides* E. Lundstr. n. var., *P. Bergianum* E. Lundstr. n. hybr., *Geranium dahuricum* D.C. × *G. pratense* L. n. hybr. E. Lundstr., *G. Londesii* Fisch. × *G. pratense* L. n. hybr. E. Lundstr., *G. Bergianum* E. Lundstr. n. hybr., *G. sanguineum* L. f *macranthum* E. Lundstr. n. form., *G. phaeum* L. var. *lividum* (L'Hér.) Pers. f. *Linnaei* E. Lundstr. n. form., *Agrimonia eupatoria* L. × *E. pilosa* Ledeb. n. hybr. E. Lundstr., *Cerinthe minor* L. var. *campanulata* E Lundstr. n. var., *Datura Bernhardii* E. Lundstr. n. sp., *Hyoscyanus albus* L. × *H. niger* L. var. *pallidus* Waldst. & Kit. n. hybr. E. Lundstr., *Campanula rapunculoides* L. × *C. trachelium* L. n. hybr. E Lundstr., *Helianthus annuus* L. × *H. cucumerifolius* Torr.

& Gr. n. hybr. E. Lundstr., *Achillea clypeolata* Sm. × *A. millefolium* L. n. hybr. E. Lundstr. und *Centaurea nigra* L. × *C. phrygia* L. n. hybr. E. Lundstr.

Folgende früher beschriebenen Arten werden als Unterarten aufgefasst: *Iris pumila* L. subsp. *attica* (Boiss. & Heldr.) E. Lundstr., subsp. *aequiloba* (Ledeb.) E. Lundstr., *I. chameïris* Bert. subsp. *olbiensis* (Hénon) E. Lundstr., subsp. *italica* (Parl.) E. Lundst., *I. spuria* L. subsp. *maritima* (Lamarck) E. Lundst., subsp. *halophila* (Pallas) E. Lundstr., subsp. *subbarbata* (Joo) E. Lundstr. und *Papaver alpinum* L. subsp. *puniceum* (Hayek) E. Lundstr.

Die Beschreibungen der Formen sind von sehr schönen, colorierten Abbildungen begleitet. N. Wille.

Notö, A., Spredte Bemerkninger om Floraen i nordre Trondhjems Amt. [Zerstreute Bemerkungen über die Flora vom nördlichen Drontheim's Amt]. (Det kgl. norske Vid. Selsk. Skrifter. 1913. N⁰ 3. p. 1—10. Trondjhem 1914.)

Diese Abhandlung enthält neue Lokalitäten für Gefässpflanzen in einer Gegend nördlich von Drontheim. Folgende neue Formen werden kurz beschrieben: *Carex dioica* L. var. *pseudoparallela* Notö und *Potentilla erecta* Dal. Tor. f. *pseudoprocumbens* Notö.

N. Wille.

Smith, W. W., Note on *Rhododendron cyanocarpum,* Franchet (Trans. Bot. Soc. Edinburgh, XXVI. 3. p. 274—277. 1914.)

This plant wich was originally published by Franchet as "*Rhododendron Thompsoni* Hook. f. α *cyanocarpum* (species propria)" is now raised definitely to specific rank, a full description being provided by the present author as well as an enumeration of the differences between *R. cyanocarpum* and *R. Thomsoni.*

W. G. Craib (Edinburgh).

Sudre, H., Matériaux pour l'étude du genre *Hieracium.* Fragment IV (1915). (Bull. Géogr. Bot. [XXV]. p. 51—68. 1915.)

Espèces nouvelles: *Hieracium eglandulosum* Sud. de la section *Pilosellina, H. Picotianum* Sud. et *H. thlaspidiforme* Sud. de la section *Cerinthoidea, H. rimarum* Sud., *H. Fridtzii* Sud., *H. Charrelii* Sud., *H. lividibifidum* Sud., *H. cebennarum* Sud. et *H. lemovicense* Sud. de la section *Picroidea, H. Budaianum* Sud. de la section *Accipitrina.* L'auteur décrit en outre de nombreuses variétés et un hybride nouveaux, et passe au crible de sa critique différentes espèces d'Arvet-Touvet; l'exposé seul de ses conclusions exigerait de trop longs développements. J. Offner.

Personalnachrichten.

M. le Prof. **Ch. R. Zeiller,** de l'Institut, est décédé à Paris le 27 novembre 1915 à l'âge de 62 ans. — Died: Dr. **E. L. Greene** on the 10th November 1915 at Washington at the age of 72 years.

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