1900, 1–61; German abstract, 160–170), Vogt describes the leading features of a part of mid-western Norway, including a typical portion of the coast plain whose general occurrences and origin by marine abrasion were first announced by Reusch in 1894, and whose forms were further illustrated by Richter (see SCIENCE, June 26, 1896). Between latitudes 63½° and 66½°, the coast plain, now much dissected and mostly submerged, has a breadth of about 45 kil., or a third of that of Norway in this district. It bears some large unconsumed eminences here and there. Its inner border lies along a tolerably direct line at an altitude of from 20 to 50 met., and is well defined by the rather abrupt ascent to the highlands whose altitude shows that some 400 met. of rock was worn away in abrading the inner part of the plain. Further inland, the highlands are too uneven to be regarded as an uplifted peneplain; but they have been heavily denuded, their summits are composed of their hardest rocks, and their summit heights show a marked accordance with a plane sloping seaward at an angle of 40′. Belts of limestone have been worn down in longitudinal valleys by which inland communication is favored. Transverse valleys, now occupied by fiords, lead to the coast. Returning to the coast plain, it slopes gently westward, and as it gradually dips under the sea thousands or tens of thousands of skerries fringe the shore line. Its outer edge is now at a depth of from 10 to 30 met., beyond which the bottom descends more rapidly. The slope of the plain is ascribed in part to post-glacial tilting (2½′), in part to an original declivity due to abrasion as the land slowly sank. The date of abrasion is given as pre-glacial, and the fiords and other channels by which the plain is intersected are ascribed largely to glacial erosion acting on lines of previously established valleys. The fiords reach depths of from 400 to 600 met. beneath the sea, or from 1,250 to 1,500 met. below the adjoining highlands; their depth decreases forward in the coast plains. The shore lines (strandlinjen) that were cut during the post-glacial submergence stand somewhat higher than the inner border of the abraded plain, with which they should not be confused.

SWEDISH GLACIAL LAKES.

HANSEN has shown that the shore lines of extinct lakes occur in deep east-discharging valleys that occupy a belt next east of the general watershed of the Scandinavian highlands, and that the barriers by which the lake waters were held consisted of residual ice masses; thus confirming the generalization that the iceshed of the glacial period (as determined by striations and boulders) lay somewhat east of the watershed. A special account of some of these lakes is given by Gavelin ('On the glacial lakes in the upper part of the Ume river valley.' *Bull. Geol. Inst. Univ. Upsala*, IV., 1900, 231–242, map). One of these lakes in lat. 66° was over 100 kil. long, with a width up to 9 kil., and a depth of 150 or 200 met. Its outlet was westward across a pass at an elevation of 534 met. Wave-cut terraces in till and stream-built deltas of gravel are traceable round the shore line, which rises eastward with a gradient of about 1:2,000. A higher water level is found at altitudes varying between 700 and 760 met. Many other shore lines of this kind await the attention of the explorer.

W. M. DAVIS.

BOTANICAL NOTES.

POPULARIZING FORESTRY INFORMATION.

MR. ABBOT KINNEY, of Los Angeles, California, has rendered forestry a good service by bringing out a pretty book entitled, 'Forest and Water,' in which he discusses in a non-technical way many things which bear upon our forests and their management as well as their mismanagement. In a series of short chapters the author discusses enthusiastically and earnestly, if not always learnedly, many things pertaining to trees and their environment. Thus he takes up the origin and continuance of forests, forest fires, pasturage in forests, need of government control, forests in relation to torrents, study of the pines, cedars and other trees, some relations between forests and water supply, forest reservoirs, etc. In speaking of forest fires the author says, "Fire is more dreaded than any

other destroying agent by those interested in forests." In regard to the pasturing of sheep in the public forests Mr. Kinney speaks very plainly, denouncing the practice in strong terms, as most destructive to the forests. The book is illustrated with half-tone reproductions of striking photographs, which cannot fail to arrest attention. While the literary side of the book leaves something to be desired, there is no question that it will do much good, and the author is to be commended for his effort.

TITLES OF RECENT ARTICLES AND PAMPHLETS.

Under the title 'Beitraege zur Kenntniss der Grasroste' Fritz Mueller discusses in 'Beihefte zum Botanischen Centralblatt,' Band X., a new species of *Puccinia* (*P. symphyti-bromorum*) related to Ericksson's *P. dispersa,* and in the course of his paper gives the details of many cultural experiments. The latter will be of much interest to students of the Uredineae who are engaged in similar work —Dr. Th. Valeton, in the 'Bulletin de L'Institut Botanique de Buitenzorg' (VIII.), in an article entitled 'Die Arten der Gattungen *Coffea* L., *Peristomeris* Thw., und *Lachnastoma* Korth., gives the results of a critical study of these genera in the form of careful diagnosis, followed by notes on certain species. *Coffea* is divided into two subgenera, viz., *Eucoffea* (which includes among others the well-known *C. arabica*), and *Paracoffea,* containing six to eight Asiatic and African species.—Robert Hegler's paper, 'Untersuchungen ueber die Organization der Phycochromaceenzelle,' in Pringsheim's 'Jahrbuecher' (Bd. XXXVI.), is important as a contribution to our knowledge of the structure of the cell of Protophytes. He distinguishes what he regards as a genuine nucleus in every cell, and is able to separate this from the cytoplasm. In each he makes out a ground-mass in which is a more deeply staining granular part. In division he describes what appears to be a crude imitation of the karyokinetic stages as seen in higher plants, but his photographs do not certainly sustain this statement.—In the last number of *Hedwigia* (Bf. XL., Hft. 5) Georg Bitter brings to a close his paper, 'Zur Morphologie und Systematic von Parmelia,' in which he has discussed in particular the subgenus *Hypogymnia.*—A notable paper in the September *Annals of Botany* is Margaret C. Ferguson's 'Development of the Egg, and Fertilization in *Pinus strobus,*' in which she notes the similarity between fertilization in the pines and processes known to take place during fertilization in some animals. Three plates of about ninety figures illustrate the paper.—V. S. White's paper, 'The Tylostomaceae of North America,' in the August *Bulletin of the Torrey Botanical Club,* is a valuable contribution to our knowledge of these curious puff-balls. The paper is illustrated with ten plates, including seventy-eight figures.—Dr. Walter Migula, the well-known German botanist, has undertaken to bring out a new 'Kryptogamen Flora' of Germany, which is to constitute the fifth, sixth and seventh volumes of Thome's 'Flora von Deutschland, Œsterreich und der Schweiz.' The first Lieferung takes up the Bryophyta. A feature of the work is to be the use of colored plates for illustrating the text, and the examples given in the first number indicate that this part of the work is to be well done.—Numbers 209 and 210 of Engler and Prantl's 'Pflanzenfamilien' are devoted to the Selaginellaceae, and the fossil members of this family and of the Lycopodiaceae, and in addition, the Lepidodendraceae.—The sixth 'Heft' of Engler's 'Pflanzenreich' has appeared, and we may now judge of the magnitude and importance of the work which Engler has undertaken. These six Heften have treated of the families Musaceae, Typhaceae, Sparganiaceae, Pandanaceae, Monimiaceae, Rafflesiaceae, Hydnoraceae, and Symplocaceae, and to these about four hundred and fifty pages have been given. The illustrations and text maintain the high standard of the earlier numbers.

SUPPLEMENT TO NICHOLSON'S DICTIONARY OF GARDENING.

Botanists and horticulturists will find much of value in the two volumes which constitute the supplement to this well-known work. In 747 pages the editor has succeeded in adding a great amount of new and supplemental mat-

ter, and in fact brings the work fairly up to the present. The volumes have the appearance of those which preceded them, and the typography and illustrations are of the high order with which we were familiar in the earlier volumes. The colored plates, which are quite lavishly used, are very fine, indeed; in fact they are not to be excelled anywhere in works of this class. Many of the black illustrations are from photographs which have been reproduced with unusual fidelity. In the text the topics which attract one on account of full treatment are: *Adiantum,* where many additions are made; *Alsophila,* to which two beautiful illustrations are added; *Aquatic Plants,* covering eight pages, and including five fine photographs; *Asplenium,* with forty figures, and covering thirteen pages; *Bedding Plants,* nine pages; *Cacti,* eight pages; *Chrysanthemum,* ten pages; *Cypripedium,* twelve pages; *Ferns,* six pages; *Landscape Gardening,* eleven pages; *Sphingidae,* six pages; *Tulipa,* four pages.

CHARLES E. BESSEY.
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THE CARNEGIE INSTITUTION.

MR. ANDREW CARNEGIE'S great gift of $10,000,000 for scientific research has beeen transferred to a corporation to be known as 'The Carnegie Institution.' The original incorporators are Secretary Hay, Dr. D. C. Gilman, lately president of Johns Hopkins University and director of the Washington Memorial Institution; the Hon. Chas. D. Walcott, director of the U. S. Geological Survey and president of the Board of Trustees of the Washington Memorial Institution; Dr. John S. Billings, U. S. A. (retired), director of the New York Public Library; the Hon. Edward D. White, associate justice of the Supreme Court of the United States, and the Hon. Carroll D. Wright, U. S. Commissioner of Labor. The original incorporators will select a board of from 27 to 30 trustees.

The preamble of the articles of incorporation is as follows:

We, the undersigned, persons of full age and citizens of the United States and a majority of whom are citizens of the District of Columbia, being desirous to establish and maintain in the City of Washington, in the spirit of Washington, an institution for promoting original research in science, literature and art, do hereby associate ourselves as a body corporate for said purposes under an act to establish a code of law for the District of Columbia, approved March 3, 1901, Sections 599 to 604 inclusive.

The objects of the institution, in addition to the promotion of research, are set forth as follows:

To acquire, hold and convey real estate and other property necessary for the purpose of the institution and to establish general and specific funds.

To conduct, endow and assist investigation in any department of scientific literature or art, and to this end to cooperate with governments, universities, colleges, technical schools, learned societies and individuals.

To appoint committees of experts to direct special lines of research.

To publish and distribute documents, to conduct lectures and to hold meetings.

To acquire and maintain a library and, in general, to do and perform all things necessary to promote the objects of the institution.

SCIENTIFIC NOTES AND NEWS.

SOME account of the recent meeting of the American Society of Naturalists and the affiliated societies will be found at the beginning of the present issue of SCIENCE. The address of the president, Professor Sedgwick, is also printed above. It may be added that the society took action commending a national board of health and the preservation of the remains of the cliff-dwellings in Arizona. The sum of $50 was appropriated toward the University table at the Naples Zoological Station. A committee was appointed, consisting of Professors Minot (chairman), Sedgwick, Cattell, Wilson and McGee, to confer with a similar committee to be appointed by the naturalists of the Central and Western States in regard to the relations of the two societies. The officers elected for next year are as follows: *President,* J. McKeen Cattell, Columbia University; *Vice-Presidents,* C. D. Wolcott, U. S. Geological Survey, L. O. Howard, Department of Agriculture, and D. P. Penhallow, McGill University; *Secretary,* R. G. Har-