

of federal jurisdiction over railways and waterways, which carry diseases from one state to another, and showed that such jurisdiction would have prevented the Chicago-St. Louis controversy over the drainage canal. Mr. Edward T. Devine made a stirring speech, bringing home to the audience what a reduction in the death-rate means in the concrete experience of the individual. The elimination of deaths from tuberculosis, even if the same number of deaths were added to the mortality from other diseases coming later in life, would lengthen the average life by twelve years. In the summer of 1906 Professor J. P. Norton, of Yale, read a paper before the Economic Section of the American Association for the Advancement of Science, on the "Economic Advisability of a National Organization of Health," which excited much interest and resulted in the formation of the Committee of One Hundred. This committee was first formally organized on April 18, 1907. Its officers at present are: President, Irving Fisher; secretary, Edward T. Devine; treasurer, Title Guarantee and Trust Company; vice-presidents, the Rev. Lyman Abbott, Miss Jane Addams, Dr. Felix Adler, President James B. Angell, the Hon. Joseph H. Choate, President Charles W. Eliot, Archbishop Ireland, the Hon. Ben B. Lindsey, Mr. John Mitchell, Dr. William H. Welch. In the following month (May, 1907) President Roosevelt sent the committee a letter of indorsement in which he said:

Our national health is physically our greatest national asset. To prevent any possible deterioration of the American stock should be a national ambition. We can not too strongly insist on the necessity of proper ideals for the family, for simple living, and for those habits and tastes which produce vigor and make men capable of strenuous service for their country. The preservation of national vigor should be a matter of patriotism. I can most cordially commend the endeavors of your committee to bring these matters prominently before the public.

There are now about six thousand five hundred persons on the various mailing lists of the Committee of One Hundred. The American Health League, the national society affil-

ated with the Committee of One Hundred, is growing with amazing rapidity—a fact significant of the popular interest in the movement. Every member of congress has been written to, and a large number have expressed their willingness to advocate health measures. The first legislative measure will be one to authorize the President to redistribute the existing scientific and health bureaus of the government. The recent unfortunate experience with the present arrangement of bureaus in the navy is only one of many instances of lack of cooperation and coordination. It is not anticipated that these existing bureaus will oppose a rearrangement. On the contrary, it is known that most of them favor it, especially as, after the redistribution, their powers and appropriations, as well as their efficiency, will be increased. The committee has received the indorsement of the American Medical Association and of a number of other organizations engaged in the work of human betterment, including the American Association for the Advancement of Science itself, which at its recent meeting voted that hereafter the committee should represent not only the Economic Section in which it originated, but the entire association.—*The Outlook*.

BOTANICAL NOTES

A STUDY OF PHILIPPINE WOODS

IN the *Philippine Journal of Science* for October, 1907, Mr. F. W. Foxworthy publishes an interesting and very valuable paper on the structure, physical and chemical properties, uses, durability and botanical classification of the commercial woods of the Philippine Islands. The paper opens with a general and technical discussion of the gross morphology, the minute anatomy, color, odor, weight, seasoning, durability and uses, and this is followed by a key to the commercial woods, based upon structural characters of the woods themselves, and supplemented by photographic plates of fifty-five kinds. The names given are those which are used on the islands, and the kinds are arranged in the alphabetical order of the most widely used of these names. Thus the native name is given first, then are given in succession, the scientific name (with

occasional synonyms), the natural family, the several vernacular names, the distribution, properties of the wood, uses and structure. Sixty-eight kinds are described in this way, and these represent somewhat more than eighty species. For the most part these belong to families and genera but little known to the botanists of temperate climates, as *Pithecolobium*, *Parkia*, *Intsia*, *Pterocarpus*, *Sindora* and *Pahudia* of the *Leguminosae*; *Euphoria* and *Pometia* of *Sapindaceae*; *Koordersiodendron* and *Buchanania* of *Anacardiaceae*; *Sarcocephalus* and *Nauclea* of *Rubiaceae*; and such unfamiliar families as *Dipterocarpaceae*, *Combretaceae* and *Flacourtiaceae*.

The list enumerates dicotyledonous woods only, although the palms, bamboos and screw-pines yield poles, posts and other materials for structural work. Of the conifers, while several species are natives of the islands, they are so scattered or they occur in such inaccessible places in the mountains that they are practically unknown in the markets.

An interesting discussion is given of growth-rings, and we learn that they "seem to be characteristic of some of our woods only." "It also appears that many trees exhibit rings of seasonal growth when they are young, but not afterwards." We are told that a series of observations on the manner and rate of formation of growth-rings in tropical trees is now under way. We can not speak in too high praise of the kind of work done in the preparation of this paper.

THE SYSTEMATIC BOTANY OF THE LICHENS

TEN years ago Fünfstück began the volume dealing with the lichens in Engler and Prantl's "Natürlichen Pflanzenfamilien," and now we have the closing *Lieferung* with title-page and index. Including the index the volume covers 250 pages, and when bound will constitute one of the smaller books of the series. The illustrations, of which there are 125, are of the high order of excellence which we have come to expect in this publication.

It is estimated that there are about 4,000 species of lichens, nearly all of which belong to the subclass *Ascolichenes*, only seventeen

belonging to the *Hymenolichenes*. The *Gasterolichenes*, indicated on page 49, are withdrawn on page 239, as the result of recent investigations. Throughout the volume the lichens are regarded as fungi in symbiosis with algae, in accordance with the prevailing views as to the nature of these organisms.

The general plan of classification adopted by Zahlbruckner, who wrote the systematic part, is as follows:

Subclass ASCOLICHENES,

Order *Pyrenocarpeae*, with thirteen families, from *Moriolaceae* to *Verrucariaceae*, and *Mycoporaceae*.

Order *Gymnocarpeae*,

Suborder *Coniocarpineae*, with three families, from *Caliciaceae* to *Sphaerophoraceae*.

Suborder *Graphidineae*, with five families, from *Arthoniaceae* to *Roccellaceae*.

Suborder *Cyclocarpineae*, with twenty families, among which are *Lecidiaceae*, *Cladoniaceae*, *Collemataceae*, *Peltigeraceae*, *Parmeliaceae*, *Usnaceae*, *Theloschistaceae*, *Physciaceae*, etc.

Subclass HYMENOLICHENES,

with but one family of three genera—*Cora*, *Corella* and *Dictynema*.

A valuable feature of the work is the indication under each family and genus of the nature of the particular algae ("gonidia") associated with the fungal symbiont.

STILL MORE SPECIES OF CRATAEGUS

THAT the description of additional forms of *Crataegus* under the name of "species" has not yet come to an end is shown quite emphatically by an article entitled "*Crataegus* in Southern Michigan," by Professor Sargent, in the Report of the Michigan Geological Survey for the year 1906. From material collected in two localities in the eastern part of the state, and one in the western, fifty-five species are described, twenty-five of which are new to science. Eighteen of the remaining thirty species are of recent separation by Ashe, mostly from one locality. We are told

that "Southern Michigan forms the western extension of what is perhaps the richest *Crataegus* region in the world." And further, "Judging from the material which I have seen from other parts of the lower peninsula and which is too incomplete for critical study, it seems probable that there are still a large number of unnamed species." With the prospect of seventy-five to eighty or more species of hawthorns in southern Michigan alone, the botanists of that state may confidently be expected to join the ranks of those who would restore the idea of species to its old significance.

Eventually most of these "species" will probably be sorted and arranged as interesting forms and varieties. As such they will be useful to the critical collector and field botanist. Possibly they may serve as examples of the "elementary species" of some recent writers, or of the "incipient" or "nascent" species of others. They are *not* the species of Gray, Torrey, Bentham, DeCandolle, or Linné.

CALIFORNIA COMPOSITES

IN marked contrast to the preceding paper is that of Mr. H. M. Hall, under the title of "Compositae of Southern California," in the University of California Publications (Vol. 3, No. 1, Dec. 28, 1907). The author, although dealing with about five hundred species, finds few new ones. The reason for this is suggested by the author's remark in the introductory chapter, where he says, "It should be noted that the number of species could be greatly augmented by recognizing numerous forms which have been described and given specific names, but which have been reduced to synonymy in this paper." A little later he gives his opinion "that the exaltation of trivial forms, distinguished only by one or two variable characters, to the rank of species is conducive neither to clearness nor to scientific accuracy." What he says further is so well said that it may be quoted with profit at this time when we are thinking seriously of the question of the nature and limits of species. "A rational system of classification should bring out the natural relationship between the various forms; should, in other words, repre-

sent the cleavage of the larger groups into their component parts as it has taken place in nature. Much of our recent work, however, has unfortunately consisted of a mere cutting across the grain, the result being a mass of chips—the so-called species—each being a purely artificial product and bearing no evident relationship to the others. This is commonly the result of hasty work where the perpetrator has been too busy to work out natural affinities through a comparison of intergrading forms accompanied by field study."

The Compositae of southern California as understood by the author are distributed by tribes as follows: *Eupatorieae*, 9 species; *Astereae*, 113; *Inuleae*, 25; *Ambrosieae*, 18; *Heliantheae*, 34; *Madieae*, 29; *Helenieae*, 86; *Anthemidieae*, 19; *Senecioneae*, 25; *Cynareae*, 17; *Mutisieae*, 2; *Cichorieae*, 68. These plants are distributed over six "life-zones," viz., Alpine, Hudsonian, Canadian, Transition, Upper Sonoran and Lower Sonoran, and the author discusses briefly the distribution of particular species in these zones. In passing we may notice that it is in the Transition zone that are found the extensive forests of yellow pine (*Pinus ponderosa*) and white fir (*Abies concolor*), while the Upper Sonoran zone "is essentially co-limital with the chaparral belt." In looking over the list we observe that there are no species of either *Eupatorium* or *Lacinaria* (*Liatris*), and that there are of *Solidago* 4 species; *Aster*, 17; *Erigeron*, 14; *Ambrosia*, 2; *Franseria*, 8; *Xanthium*, 2; *Helianthus*, 6; *Senecio*, 11; *Carduus*, 6.

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THE AMERICAN NATURE-STUDY SOCIETY

THE American Nature-Study Society was organized at Chicago on January 2, 1908. Its purposes, as stated in the adopted constitution, are: (1) To promote critical investigation of all phases of nature-study (as distinguished from technical science) in schools, especially all studies of nature in elementary schools; and (2) to work for the establishment in schools of such nature-study as has