danus, a subject of broad biological interest which, although the illustration was drawn from entomology, applied to principles extending through all of zoology and of botany as well.

Three years ago, at Zurich, Professor von Schulthess adopted still another plan. Very appropriately, he spoke of the long postponement of the congress from 1912 to 1925 and of the World War which interrupted the proposed third congress at Vienna in 1915 and put off all congresses for many years. He then spoke of the city of Zurich and of the historical development of entomology in Switzerland from the time of the publication of Sulzer's work in 1761 (fourteen years before Fabricius' first publication). Doubtless this third president, facing the long Zurich program, deemed it best measurably to efface his personality by shortening his remarks. It was a matter of regret for those of us who were present that he did not speak at greater length and give us some of the big ideas he has gained in a lifetime of work. His known standing and his impressive and delightful personality made us all wish to hear more from him, but perhaps his decision was the wisest, and the present speaker is much inclined to follow his example.

It is not needed that I should speak of American entomology. Most of us here are Americans. Those who come from other countries are men of wide reading and know of the sound work done here by an older generation, including Leconte, Horn, Scudder and Packard, and they know of the rather remarkable developments of economic entomology in the United States. But we are meeting in a university which was one of the first great institutions of learning to teach entomology as a distinct subject and to give it a measure of its appropriate rank. In this country at least, Cornell University will always be remembered by entomologists for this fact. And the man who, from the very start in 1874, conducted this invaluable teaching work, J. H. Comstock, lives here. America is so young that few shrines have come into popular recognition. There is one at Mount Vernon, the home of Washington; and there is the memorial in Washington to the great emancipator, Abraham Lincoln. The study of entomology seems a very small thing when we compare it to the causes represented by these two of our national heroes, but who shall say that in the future, when the vital importance of insects as affecting the well-being of humanity shall have become fully realized, this spot shall not become in a way a shrine where entomologists will gather in token of their respect to the first great teacher of entomology in America?

Very possibly you expect that the present speaker will touch upon the subject of economic entomology, a branch of our science with which he has been occupied for many years. The great support that has been given to entomological work with the practical end in view, perhaps notably in the United States, but with rapidly increasing strength in other countries, has not only encouraged the development of many strong workers who have brought about highly valuable results, but it has shown these workers in a very forceful way the basic value of the labors of those ardent entomologists who have been carried away by the fascinating scientific interest of other aspects of the science. It is in this way that more and more support is being given to work in entomology as a whole. It has had its effect upon college laboratories, upon museums and upon entomologists everywhere. The science through all its innumerable ramifications is acquiring a solidarity which means very much for the future—for the broadest recognition of its importance.

And so the members of section 5 (applied entomology) will continue to look upon the eminent members of sections 1, 2, 3 and 4 (morphology, anatomy and physiology; systematics and geographical distribution; nomenclature and bibliography; biology and evolution) with a deep respect, perhaps tinged with awe. The members of these sections, dealing as they do with "pure" science, will, I trust, look to the section-5 men as useful members of the congress who perhaps more than the others are helping to reform the old ideas of entomology and are bringing public appreciation and public funds to its support.

To those of you who come from the older countries for the first time we bid especial welcome; and we trust that you will return with a good opinion of us. We have been accused of self-consciousness; but we are young, and all young people are self-conscious. We have been accused of pride of achievement; but all young people who have a well-founded pride are very frank in expressing it. Our faults, then, are the faults of youth; and our accomplishments are those of ambitious, energetic youth, tempered and guided by the learning, experience and culture of the older countries.

L. O. HOWARD

UNVERIFIED GEOGRAPHIC RANGES

THE European conception of American geography has been a perennial source of humor to Americans, just as some American idiosyncrasies often supply amusement for the European. When, for instance, a correspondent in Leningrad asks me to "run out to Saskatchewan," where Bourgeau once collected an interesting plant, and secure for him living material, or when an English botanist requests for comparison growing specimens freshly collected for him in northern Newfoundland and western Alaska, we naturally

smile, for the latter areas are about four thousand miles (6,400 km) apart and without first-rate means of communication. To secure fresh specimens simultaneously from both regions would be equivalent to collecting simultaneously in Iceland and Nova Zembla or in Portugal and Ceylon. Or, again, when a continental botanist refers to "Newfoundland, an island in the harbor of Ottawa"[1] (geographically, though not politically, equivalent to speaking of Ireland as in the harbor of Berlin or Denmark as in the harbor of Moscow) and another cites a plant collected near Philadelphia (with a population exceeding two million) as coming from near "the village of Philadelphia,"[2] we are naturally grateful for these unconscious bits of humor.

If, however, we are looking for such innocent sources of entertainment, nothing excels Béguinot and Belosersky's *Revisione Monografica del Genere Apocynum* (1913). One can not help wondering if the authors ever attempted to find an atlas of North America or if the labels so erroneously copied really could have meant anything to them. "Late" Winnipeg, "Keweenaco" or "Keweenaio" Co., Michigan, "Penn Jan, Jates Co.," or "Perm Van," New York (for Penn Yan, Yates Co.), "Reichmond," Virginia, "Baltimora" (Biltmore), North Carolina, "Odui" (Odin), Illinois, and "Yonkeis" or "Jonkes," New York, are regularly cited and hundreds (perhaps thousands) of other localities not decipherable without the original label: "Mt. Halyoxe south Hadley" (Mt. Holyoke, South Hadley), "Steeping water" (Weeping Water), Nebraska, "Artistis Gleen" (Artist's Glen), "Dear Lake, lower Arron Lake" (Deer L., Lower Arrow L.), "Bumed timber area, Cherlum Lake" (Burned timber, Chelan L.), "*Jakina Region;* Wenatchu" (*Yakima Region;* Wenatchee), "Maryland.—Ma grunder" (Magruder), "Massachusets.—Hasland, Sh. Melton" (Highland St., Milton), "Big camac praine" (Big Camass Prairie), Idaho, "Drycapsa, Bridgeport" (Dry copses), "Deer Rim" (Deer Run), Colorado, "Jassagara" (Tessajara) Hot Springs; and, best of all, "Lake Corn d'Alume" (L. Coeur d'Alene) and "N. Messico:—Wring fired rauch" (New Mexico:—Wingfields Ranch). Not only does one surmise that Béguinot and Belosersky did not consult a good atlas; it is equally evident that they copied American labels (mostly clearly printed) without the aid of an English dictionary. It is certainly doubtful if they intended to rival *Jabberwocky* with their "Artistis Gleen," "Bumed timber," "camac praine" and "Wring fired rauch" or by such new coinages as "spreading slong-bank," "Grawelly soil" and "oorth of Salt Lake City." And who can interpret this English said to accompany a specimen collected at Seneca Lake, New York: "an coast skow of Semea Lake"?

My student, Mr. Robert E. Woodson, Jr., assures me that since he discovered this book he has regularly partaken of it when tired or in need of relaxation and that after two years of use he still finds fresh stimulus from its perusal! The great English student of the sedges, the late Charles Baron Clarke, writing from India and in an apologetic mood, said: "All papers, at least of a systematic kind, prepared in Asia, Africa, or America, must be, as literary work, very poor performances in the eyes of botanists in the herbaria of London, Paris, and Geneva."[3] It is beyond dispute that in the field of humorous literature no American botanist has yet equaled that above cited.

It is not of such naïve slips, however, that I specially wish to write. My concern, perhaps becoming intensified as its sources multiply, is with more serious geographic errors of fact which are altogether too common and which are due partly to ignorance, partly to failure to verify each doubtful point, but chiefly to indifference or inertia. Some of these errors, although quite inexcusable, leave a sufficient core of truth for us to make out what is meant. To this relatively harmless group belong the following: "Etats-Unis: Rogers' Pass, Selkirch Mts. . . . (Miss E. M. Farr),"[4] published by the organizer and for years the permanent secretary of l'Académie International de Géographie Botanique; and "Sable Island, Canada, U. States,"[5] perpetrated by an Englishman, apparently heedless of the international complication involved. Comparable with these cases, because not necessarily leading to complete misunderstanding, are the helter-skelter citations of localities, with states and towns treated as coordinate, so frequent in European publications and, unfortunately, in some American: such, for example, as "Süd-Carolina, Georgien, New Orleans, New Jersey, Louisiana; Virginia, Florida."[6] If we should cite a European range as England, France, Naples, Scotland, Italy, Ireland, Spain, we should expect to be accused of lacking geographic sense. And sometimes we certainly fail to display it, for, as already intimated, it is not difficult to find American systematic botanists who juggle geographic citations; and when an

[1] This gem was read about twenty years ago, but its exact source unfortunately forgotten.

[2] "in loco humido propre villam Philadelphia"—Buchenau, Monographia Juncacaerum, 378 (1890).

[3] C. B. Clarke, *Jour.* Linn. Soc. Bot., xxi, 2 (1884).

[4] Léveillé in Fedde, Repertorium, v, 8 (1908), meaning British Columbia: Rogers Pass, Selkirk Mts., etc.

[5] A. Bennett in Fryer and Bennett, "Potamogetons of the British Isles," 85 (1915).

[6] Ruhland in Engler, "Das Pflanzenreich," iv^{30}, 34 (1903).

American monographer cites specimens from Lake Mistassini (emptying into Hudson Bay) and Ungava River (draining into Hudson Strait) as coming from Hochelaga County, Quebec (Montreal and vicinity), or extends a range southward into Lower California on the basis of collections from the Sierra Nevada Mountains and from the shade of the Big Trees, *Sequoia gigantea,* it becomes evident that as a people we can not safely throw stones at our transatlantic confrères.

We systematic botanists (and some other botanists are not above reproach) can not call our work satisfactory until, as a group, we make greater effort to have the ranges fit the facts. In my early days of botanizing I distributed with full printed labels a series of exsiccatae from Aroostook County, Maine. One sterile plant, collected at St. Francis, Maine (No. 45), was erroneously determined and distributed as *Myriophyllum ambiguum* Nutt. (*M. humile* Morong), but fruiting plants (No. 44) from the same locality show it to be *M. verticillatum,* var. *pectinatum* Wallr. *M. humile* (*M. ambiguum*) is a species of decidedly limited area, on the northern Atlantic coastal plain and adjacent regions, the representation in the Gray Herbarium showing clearly identifiable material only from the Atlantic seaboard—Nova Scotia and Maine to New Jersey and eastern Pennsylvania, with sterile specimens perhaps belonging to it from slightly farther south. Nevertheless, Schindler,[7] having before him a specimen wrongly identified as *M. humile* and accompanied by a printed label with the full-face heading **Maine Flora, Aroostook Co.,** seized upon the locality printed below, ST. FRANCIS, and in "Das Pflanzenreich" at once extended the supposed range from the Atlantic to the Pacific slope, citing this specimen as coming from San Francisco!

One of the pioneer botanical explorers of the White Mountains of New Hampshire was William Oakes, whose memory is preserved by Oakes Gulf. One of the plants distributed broadcast by him was a tiny *Euphrasia,* with a densely capitate inflorescence and chocolate-purple corollas; and many years after the death of its discoverer, the tiny alpine *Euphrasia* won recognition as *E. Oakesii* Wettstein, "'In alpibus montium Alborum' (Oakes . . .)."[8] But, unfortunately, when he mapped the ranges of the different species (Karte I), Wettstein was undone by the locality, "White Mountains," and indicated this local species of northern New Hampshire as found only on the White Mountains of Mono County, California, and adjacent Nevada, fully two thousand five hundred miles (4,000 km) southwest of its true habitat and more than one thousand miles (1,600 km) south of the limit of the genus in western North America. Such an error would be paralleled by indicating *E. pumila* of the Tyrol as occurring only on the high mountains of Abyssinia, where no member of the genus is known.

We are inclined to laugh at such instances as the last two and to make sweeping generalizations regarding the European's ignorance of American geography; but, in view of two conspicuous volumes by Americans upon geographic botany elsewhere reviewed,[9] the European may appropriately remind us of the old saying as to him who laughs best. And, surely, no European monograph has equaled for unverified geographic fact two American revisions by outstanding systematists. These cases have elsewhere[10] been discussed, so that here they need be only outlined. In the first case, the American monographer of *Rumex* took up *R. salicifolius* Weinm. as occurring from "Arctic America across to Alaska, south to New Hampshire, the Great Lakes and in the mountains to Southern California and Mexico." Then, after referring to certain variations of the species as thus interpreted, he said: "It may be that these forms will bear separation, even from the Old World type. . . . A more zigzag plant with . . . one valve almost covered by the very large callosity . . . occurs from Sta. Cruz Mountains" to neighboring coasts of California. Had this monographer done the most obvious thing expected of a monographer and consulted the original description of *R. salicifolius* he would have noted that it was characterized by "valvulis integerrimis; unica granifera" and that its habitat was "In California"; thus the absurdity of talking about "the Old World type" would have been avoided. In another instance, Provancher, disliking to use for an endemic American plant the obviously inappropriate name, *Nuphar advena,* substituted for it (in violation of modern retroactive rules) the appropriate name *N. americana* and in his "Flore Canadienne" gave it the broad range: "Lac St. Jean-Géorgie [Lake St. John to Georgia]"; whereupon, later monographers of the group, who devoted some space to scoring the inaccuracy of other botanists, finding Provancher's substitute-name, took it up as a new species with the "TYPE LOCALITY: Lake St. Jean-Georgie, Quebec"! Until American systematists stop perpetrating such gaucheries as these we certainly can not with good grace criticize European blunders in American geography.

But the immediate stimulus which inspired this pro-

[7] Schindler in Engler, "Das Pflanzenreich," iv[225], 101 (1905).

[8] Wettstein, "Monographie der Gattung Euphrasia," 142 (1896).

[9] For reviews see Fernald, *Rhodora,* xiii, 213–224 (1911) and *Ecology,* vii, 510–516 (1926).

[10] See Fernald, *Rhodora,* x, 17, 18 (1908) and Fernald and St. John, *Rhodora,* xvi, 140, 141 (1914).

test is the unintelligent treatment of American geography in a current sumptuous work, in which it was hoped that precision would be the rule. I refer to the folio series of maps now coming out as "Die Pflanzenareale[11] under the direction of competent phytogeographers. The maps of ranges of Old World plants or groups are, we trust, accurate; but the map indicating the ranges of two North American sections of *Acer* so distort the facts that they can not be passed without protest. This map (Karte 4), prepared by Pax, indicates clearly the supposed ranges of the endemic North American *Acer* §§ *Rubra* and *Negundo* and in the bibliography his own treatment of *Acer* in "Das Pflanzenreich" and the treatment in Sargent's "Manual of the Trees of North America" are specially cited as the sources of information. The range of *Acer Negundo* given in the latter authoritative work (in the first edition, which alone is cited by Pax) is "western Vermont . . . southward to northern Florida and westward to the eastern slope of the Rocky Mountains, and to Utah, New Mexico, and eastern Arizona; rare east of the Appalachian Mountains," while the var. *californicum* occurs in "Valley of the lower Sacramento River and the interior valleys of the coast ranges from the Bay of San Francisco to about latitude 35°, and in high cañons on the western slopes of the San Bernardino Mountains, California; connected by intermediate forms from Arizona to Texas, the Indian Territory and Missouri, with the eastern tree." As to the occurrence of the § *Negundo* in Mexico and Central America, the most authoritative statement is that of Standley's "Trees and Shrubs of Mexico," where members of this section are cited from the states of Vera Cruz, Tlaxcala, Mexico, Puebla, Michoacan, Chiapas and Guatemala, but not from Yucatan, Sinaloa and Lower California. The statements of range of this section given by Pax in "Das Pflanzenreich" are entirely consistent with those of Sargent and of Standley, a range indicated, with liberal outside allowance, by the inner or broken line on the accompanying map (Fig. 1). But in spite of having the facts clearly before him Pax publishes in "Die Pflanzenareale" the outside boundary shown, thus making it appear as if *Acer* § *Negundo* extends one thousand miles (1,600 km) northeast of its actual limit to southeastern Labrador and Newfoundland, far outside its southeastern limits into southern Florida and Yucatan, one hundred and fifty miles (240 km) outside its southwestern limit into Lower California and more than one thousand miles (1,600 km) northwest of its true limit into southern Alaska.

[11] "Die Pflanzenareale" . . . Unter Mitwirkung von Dr. Ludwig Diels und Dr. G. Samuelsson herausgegeben von Dr. E. Hannig und Dr. H. Winkler. 1 Reihe, Heft 1 (1926).

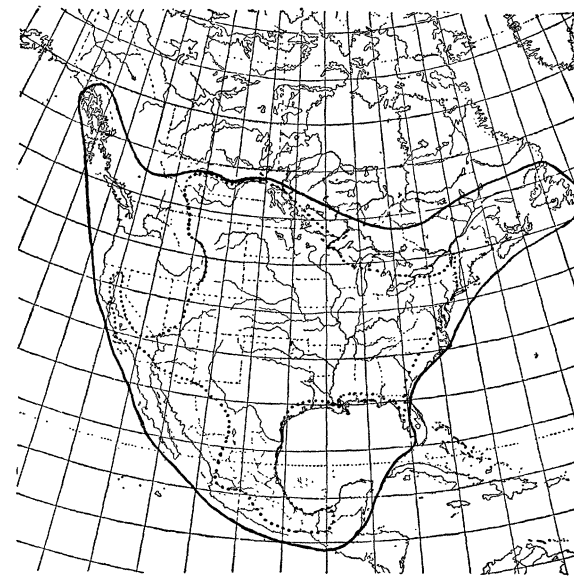

FIG. 1. Inner (broken) line, approximate limit of *Acer* § *Negundo;* outer (continuous) line, boundary as published by Pax.

These different outside areas erroneously given by Pax all have distinctive climates and vegetations, which have been well studied and which are not at all compatible with the occurrence there of *Acer Negundo* of the warm valleys, chiefly of the Mississippi basin and valleys to the south.

In his treatment of *Acer* in "Das Pflanzenreich," Pax gives the eastern and northern limits of *Acer rubrum* correctly as "von Neu-Fundland bis Florida . . . nordwestlich bis zum Winipeg," the other members of § *Rubra* not extending so far north. Nevertheless, in "Die Pflanzenareale" he presents the northern boundary of § *Rubra* (shown in solid line in Fig. 2) as falling nearly five hundred miles (800 km) short of the eastern limit (in broken line) previously and correctly assigned by him, but running at least two hundred miles (320 km) north of its known range in Quebec. Such cases as these, where the monographer of a genus has the true facts definitely before him, but is unable to transfer them to a map without making errors of hundreds or thousands of kilometers, clearly indicate that the editors of "Die Pflanzenareale" have a real problem before them; if the maps they sponsor are to promote science, not retard it, they must visé each one and they must make sure that the distinguished authors of the maps have at least an elementary knowledge of geography and, passing this test, that they take a real interest in presenting the facts without distortion.

This discussion of geographic ignorance, indifference or inexcusable carelessness may seem unduly prolonged; but, in fact, not one per cent. of the instances

FIG. 2. Broken line, approximate northern limit of *Acer* § *Rubra;* continuous line, limit as published by Pax.

I have noted are here presented. It must, however, be clear that a very vigorous reform is necessary in the work of many of us systematists if we do not wish to be wholly discredited. In systematic zoology, I am informed, the proportion of crude geography is much less, a fact due to the circumstance that more stress has been laid upon geographic variations than is done by many systematic botanists. And, in spite of a general impression among many Americans that it is the European who mangles American geography, enough instances from the work of outstanding American systematists have here been given to indicate that there is little to choose. Our own record is too discreditable to boast about, and not until we make a real effort to brace our own geographic citations can we expect the European to do much better. At present *dis*honors are even. Why not strive to make *"honors* even"?

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PLINY EARLE GODDARD

PLINY EARLE GODDARD was born on August 24, 1869. He died on July 12, 1928. His death is a loss for American anthropology that will long be felt. His interest in anthropology was first fostered by personal, intimate contact with California Indians. It was not the occupation with abstract scientific problems that attracted him. It was rather the human interest in their troubles, their thoughts and feelings. It is not an accident that this undertone persisted in all his later scientific work. The native never appealed to him solely as a subject to be examined and dissected, but as a man or woman who had to be understood as moulded by the culture in which he lived.

On this basis grew up his scientific work, broadening over wider fields, as his experience grew. His first, purely human labors with the Hupa Indians taught him the necessity of studying their language. In Benjamin Ide Wheeler he found an appreciative friend who led him on in his linguistic studies. With keen understanding for the need of accuracy he was the first to apply experimental methods to the study of sound systems of American languages. While he remained in California his interest was centered in the study of the Athapascan tribes of that state, their languages, customs, beliefs and traditions.

The study of the present languages and cultures of these tribes led him soon beyond the limits of California. An understanding of modern conditions requires a study of the history of their development, in particular a knowledge of related tribes. The congeners of the California tribes he had studied live in the far north and in the southwest and we find him soon extending his studies over these regions.

The opportunity for this extension of his labors was presented by his appointment as curator of Ethnology in the American Museum of Natural History in New York in 1909. For the Museum he investigated the Beaver Indians of northwestern Canada and later on directed his attention to the Apache and Navaho of New Mexico and Arizona.

It was impossible for him, with his ever-widening interests, not to see the close relation between the problems presented by the southwestern Athapascan tribes and the sedentary tribes of this region and he became a powerful stimulus for the development of recent activities in the southwest. In this the cooperation with Dr. Elsie Clews Parsons was a most important element. In joint labors a systematic ethnological exploration of the Southwest was planned and is still in progress. Many of the results have been published in the Papers of the American Museum of Natural History, in the publications of the American Folklore Society and of the American Ethnological Society. While his own published contributions remained confined to the Athapascan tribes, many others are the outcome of his planning.

The task imposed upon him by the administrative work of the Museum also bore excellent fruit. As the horizon of his knowledge expanded his mastery of the subject grew and he endeavored to do his share in making available to the general public the results of our studies. The highly instructive and artistic groups illustrating primitive life, that tell the casual visitor more than large collections, were made under his directions and his handbooks of northwest coast and southwestern culture are models of a concise, clear representation of primitive culture.