isophane and altitude index; and the phenological index; each modified by topographic, geologic, soil, and other features so as to define local subdivisions, even down to specific places only a few rods or feet in extent which may represent an element or feature of distinction.

When we learn to recognize and properly interpret these various guides to the major and minor features of a bioclimatic zone, it will be an easy matter to determine not only what zone is represented by a given region and section of the country, but what section or minor element of a zone is represented by a given place on a given farm. Then we will realize all and far more than Dr. Merriam and others have claimed for the life zones as guides to the development of human welfare in food, health, and prosperity.

BOTANY.—*Two new species of* Bursera.[1] HENRY PITTIER.

The two new species of *Bursera* here described have been found by the writer in the course of study of the Central American material of this genus in the United States National Herbarium.

Bursera panamensis Pittier, sp. nov.

Low tree or shrub; branchlets short, thick, glabrous, grayish; leaves pinnate, small, the rachis pubescent, 1 to 4 cm. long, narrowly winged between the two lower pairs of leaflets, more broadly so between the upper pair; leaflets 5 to 9, subcoriaceous, sessile or almost so, ovate to ovate-lanceolate, the lateral ones rounded, the terminal one acute at base and apex, serrate and slightly revolute on margin, sparsely hairy above, grayish tomentose beneath; flowers unknown; fruiting racemes pubescent, 2 to 3 cm. long, sparsely branched; drupes pedicelled, glabrous, subglobose, 6 mm. long, the pedicels 5 mm. long, bearing at the apex the persistent calyx.

Type in the U. S. National Herbarium, no. 715171, collected near the salt works at Aguadulce, Province of Coclé, Panama, December 6, 1911, by H. Pittier (no. 4993).

This species belongs to the group of *Bursera tomentosa* (Jacq.) Tr. & Pl., with pedicellate flowers and membranous, serrate or crenate leaflets, these more or less hairy on both faces. It is called "almácigo de cruz" by the natives of Aguadulce. The fluid oleo-resin which distils from the trunk and the decoction of the young leaves are popular medicines, the first being used as a calmant and the latter as a diuretic.

Bursera verapacencis Pittier, sp. nov.

Small tree or shrub; branchlets short, at first densely hairy; leaves clustered at the ends of the branchlets, alternate, bipinnate at the base, pilosulous above, densely brownish-hairy beneath, up to 5 cm. long and 4 cm. broad, the rachis very slender and narrowly winged; pinnae and leaflets 17 to 23, the former 6 to 10, each with 7 to 11 pairs of leaflets, these sessile, ovate or oblong, entire, rounded at the base, subacute at the apex, 2 to 8 mm. long,

[1] Received February 11, 1921.

1.5 to 4 mm. broad; racemes axillary, few-flowered, up to 3 cm. long; flowers unknown; drupes pedicellate, globose, about 5 mm. long, glabrous, the rachis of the racemes hairy, the pedicels 3 mm. long.

Type in the U. S. National Herbarium, no. 858,992 collected between Salamá and Rabinal, Baja Verapaz, Guatemala, May 31, 1904, by O. F. Cook and C. B. Doyle (no. 283).

This species is closely allied to *Bursera gracilis* Engler, but differs in the greater number of pinnae and leaflets, in the hairiness of the latter, and in having the racemes much shorter than the leaves.

ZOOLOGY.—*The selection of family names in zoology.*[1] W. L. McATEE, Biological Survey. (Communicated by S. F. Blake.)

The principles upon which the names of families and higher groups in zoology shall be selected have not received much attention, chiefly, no doubt, for the reason that the problems of genera and species have been more pressing. Indeed before action can be taken by the International Zoological Commission (presumably to be reconstituted) it is highly desirable, if not necessary, that there shall be some crystallization of opinion on the point among zoologists.

The leading Codes of Nomenclature have little to say upon the subject, the most explicit rule being found in the Stricklandian Code of 1842.[2] It states that families should be named for "the earliest-known or most typically characterized genus in them." The A. O. U. Code, 1886, says that such names "take the tenable names of some genus, preferably the leading one." The Paris-Moscow Code, 1889–92, states that family names are formed on "the root of the genus serving as the type," a remark paraphrased in the International Rules (1913) as "the stem of the name of its type genus."

The A. O. U. provision is intentionally vague; those of the last two codes mean nothing unless they are intended to be understood in the sense of the Stricklandian canon. Since, with the exception of the words "earliest-known" in the latter rule, none of these codes specifies a method of selecting "typical" genera of families, nor states what the preference shall be among competitors for the rank, references in them to the selection of family names are practically meaningless.

[1] This paper, prepared in its original form in 1918, was laid aside on the principle of "letting sleeping dogs lie," but recent contributions in Science showing the slumber to be effectually broken, a little more disturbance should do no harm. (Received March 2, 1921.)

[2] To save time reference is made to *N. A. Fauna*, No. 23, pp. 722–3 (1904), where Dr. T. S. PALMER has quoted, with references, the code clauses relating to family names.