referred by him to the Upper Eocene. Dr. Shimer has followed this invalid usage. In citations from my 1912 memoir, Mr. Liddle actually mixed together my faunal lists, and inverted my foraminiferal bed (No. 6) and my upper molluscan bed (No. 8), and pronounced the results confused!

Thereupon, I published in 1929 a complete history of the Soldado Rock Section,[6] again defining the Soldado Formation as Lower Eocene. Furthermore, I gave the name Boca de Serpiente Formation to my upper molluscan bed (No. 8), correlating it as Uppermost Eocene, equivalent to the European Ludian; while the foraminiferal bed (No. 6) was placed in the Bartonian. All due credits and citations were given.

Soldado Rock is of extreme paleontologic and stratigraphic interest. The Soldado Formation (bed No. 2) has a fauna linked by allied forms to the Lower Eocene of Alabama and to that of Pernambuco, Brazil, as shown by the writer in 1912. It also contains a remarkable genus, *Veatchia* Maury, with the genotype and only known species, *Veatchia carolinae* Maury, which in 1926 was traced from the rock to the mainland of Trinidad by Waring and Harris, in the Marac quarry,[7] in the southern part of the island, and referred by them to the basal Eocene.

In conclusion, the Soldado Rock section is the key to the interpretation of the Antillean and northern South American Eocene. The lower molluscan bed (No. 2) the Soldado Formation Maury, 1925, represents the first discovery of Old Eocene in the entire Antillean area. The foraminiferal bed (No. 6) is Bartonian, and goes with the foraminiferal marls of Bontour Point, Trinidad, referred by Douvillé,[8] in 1924, to the Bartonian. My upper molluscan bed (No. 8) is Ludian. This marked the first recognition of both Bartonian and Ludian deposits as separate entities, in the entire Western Hemisphere.[9] As I noted in 1931, this South American Bartonian can be traced from Soldado Rock and Trinidad to Panama, Ecuador and Peru, and is comparable in age and faunal affinities with the Upper Mokattam of Egypt. The St. Bartholomew limestone, long the type of Antillean Upper Eocene, goes with this Bartonian horizon. In Colombia, I regard a horizon west of El Carmen as Ludian and equivalent stratigraphically to my Boca de Serpiente formation (bed No. 8) of Soldado Rock. This ties up with the Saman formation of Peru. The main fossiliferous beds of the 1912 Soldado section are thus traced across the entire northern South American mainland.

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[6] C. J. Maury, *Journal of Geology*, XXXVII: 2, 177–181, February–March, 1929.

[7] G. A. Waring and G. D. Harris, The Johns Hopkins University Studies in Geology, No. 7, pp. 99, 101, 1926.

[8] Douvillé, Memoires Société geol. de France, p. 19, 1924. See also Illing, *Quarterly Jour. Geol. Soc. London*, 84, pt. 1: 7, 1928.

[9] C. J. Maury, *American Jour. Science*, XXII: 375–376, October, 1931.

UNISEXUAL LIMBER PINES

IN the course of an investigation on alpine vegetation in the Rocky Mountain National Park in Colorado in the summer of 1932, the writer found at timberline individuals of limber pine (*Pinus flexilis* James) that differed in appearance so markedly from the usual form as to suggest an unknown species. Close scrutiny, however, revealed that the characteristics of the aberrant form intergraded with the normal except in two ways: (1) All the leaves on a tree were uniformly shorter in length and closer spaced on the twig, and (2) the individual trees produced only male cones. Inasmuch as many of the typical trees produced but very few or no male cones, there is apparent a tendency of the species to separate the sexes to different individuals, a deviation from the normal, which is to have both sexes on the same tree. From the Alps of Switzerland a similar tendency has been reported of the five-leaved mountain pine (*Pinus montana* Miller).[1] In spite of much search in the region, and over the whole altitudinal range of the species, this phenomenon was found to exist only at timberline. Because of its many important implications, it would seem very desirable to know more about the areal and altitudinal extent of the occurrence of this tendency. It is hoped that other observers will communicate their observations.

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AN APPEAL TO SCIENTISTS OF THE USSR

A RECENT study of the extinct elasmotherine rhinoceroses necessitated assimilation of the literature, in large part by Russian vertebrate paleontologists. During the eighteenth and nineteenth centuries such Russian works were almost invariably published in French, German or Latin and, therefore, were readily available to non-Russian workers. During the present century, a constantly increasing proportion of the valuable Russian work in vertebrate paleontology has been published in the Russian language. Such papers may be entirely in Russian, may append a translated title, usually in the table of contents, or they may add a short résumé, of a paragraph or so, in English, German or French. Any one of these procedures makes the paper virtually unavailable to non-Russians, except for such inferences as may be based on the illustrations. On the other hand, another author, or the same author on another occasion, may append a full résumé, covering all essential facts and generalizations, or he may publish a briefer version, in one of

[1] C. Schroeter, "Das Pflanzenleben der Alpen," 1926.