easily, but a change in everyday use of terms describing things vital to man's welfare may be far more difficult.

"The tree is known by its fruit" forms, Biblically, the chapter slogan in a well-known book on symbiosis by Fred, Baldwin and McCoy in which they expend considerable effort to justify the use of the term "leguminous plant." Other exact writers have done similarly, until it appears generally as the common usage only by meticulous portrayers of the Leguminosae.

The terms "tree plant," "bacteria plant" and "legume plant" are not used extensively. Since "legume" is derived from the Latin "legumen" and is the correct name for the fruit or carpel only, *leguminal* is not a far call nor a supernatural one. Already we have "legumin," a vegetable casein, and "leguminous," referring to plants which produce legumes. The new word is no longer nor is it more difficult to pronounce. These many, very valuable plants which have become so well known and called by the same name which by all rights of priority and correct usage belongs to their fruit only certainly deserve greater respect and a more suitable name.

The two new words would complete a set of four very usable terms in forage or "herbage" (British) activity—leguminal, agrostal, cereal, ruderal. We would then propose definitions as follows: Plants producing legumes; grasses other than cereals; grain producing grasses; range and meadow weeds. Leguminosae and Gramineae are the two greatest plant families both in numbers as well as in value to man. Does it not appear a linguistic weakness to confuse important and valuable plant material of such immense proportion further—need the issue be beclouded longer?

Graminal includes all grasses, as does Poaceae, but "agrostal" has not yet been assigned. An agrostologist is a grass specialist; then special grasses, other than cereals, might be *agrostal* in character. "Herbal" is an anciently used qualifying word relating to all plants, just as "herbage" is the name for forage of varying classification botanically.

W. B. GERNERT

OKLAHOMA EXPERIMENT STATION

REID ON CELTIS

IN a short paper[1] describing the endocarps of a new species of Celtis from the Eocene of Réals in Hérault, France, the author states: "These endocarps mark the first known appearance of Celtis in Europe. It has been recorded from the Fort-Union (Eocene) Beds of America."

[1] E. M. Reid, *Bull. Soc. Et. Sci. Nat. Béziers,* 40: 1–8, 1936.

Fossil leaves attributed to Celtis, of which more than a dozen species have been described from many horizons in the European Tertiary, have long been known, some as early as 1850. If one chooses to ignore leaf records there are still several recorded occurrences of fruits. I have two specimens of endocarps labeled as having come from the middle Eocene at Pierrerne, Hérault, which are not dissimilar from the new species described by Reid and also much like *Celtis hyperionis* Unger described from the Miocene of Steinheim. Fruits have also been recorded from several Pleistocene localities in Europe.

If we return to America and ignore the leaf records of Celtis which range in age from the late Cretaceous to the Pleistocene, there are about ten different species based upon endocarps and found at Eocene, Oligocene, Miocene, Pliocene and Pleistocene horizons. Eastern Asia has furnished both leaves and fruits of Tertiary species of Celtis. In 1924 I described a characteristic endocarp from the middle Eocene of Colombia, South America, and leaves are common in the mid-Tertiary of Patagonia.

Mrs. Reid certainly stands out as one of the world leaders in her knowledge of carpological fossil material, and it is a great pity that she does not think it worth while to acquire some slight acquaintance with the literature of paleobotany.

EDWARD W. BERRY

THE USE OF YEAST OR OTHER FUNGI FOR VITAMIN B_1 TESTS

THE suggestion originally made by the writer[1] in 1919, and almost simultaneously by Bachmann,[2] that a fungus organism (yeast) could be used in testing for "vitamin B" has been revived in recent years by suggested quantitative tests for vitamin B_1, using yeast[3] and Phycomyces.[4]

It was shown in the writer's laboratory in 1930[5] that the crystalline vitamin B_1 of Jansen and Donath had a tremendous influence on the growth of certain yeasts, and hundreds of unpublished and published[6] experiments in our laboratory have since confirmed this observation. However, at that time (1930), it was also shown that *another fraction not possessing high vitamin B_1 activity was twice as potent as the purified vitamin* so far as yeast growth stimulation was concerned. In

[1] R. J. Williams, *Jour. Biol. Chem.,* 38: 465, 1919.
[2] F. M. Bachmann, *Jour. Biol. Chem.,* 39: 235, 1919.
[3] A. Schultz, L. Atkin and C. N. Frey, *Jour. Amer. Chem. Soc.,* 59: 948, 1937.
[4] W. H. Schopfer and A. Jung, Ve Congrès International Technique et Chimique des Industries Agricoles. Schéveningue. 1937. Extrait des *Comptes Rendus,* p. 22.
[5] R. J. Williams and R. R. Roehm, *Jour. Biol. Chem.,* 87: 581, 1930.
[6] R. J. Williams and D. H. Saunders, *Biochem. Jour.,* 28: 1887, 1934.

view of this fact, which may have been overlooked, and also because of the complicating effects of pantothenic acid and other nutrilities in tissue extracts, the use of fungi in quantitative testing for vitamin B_1 in extracts appears hazardous in the extreme. At the time the writer's first suggestion was made the current conceptions regarding the chemistry of the vitamins were exceedingly primitive, and the suggestion, even though it did not turn out to be directly usable, was nevertheless of some value as provocative of thought and experimentation. The writer believes that the observations referred to, which form the basis of the proposed tests for vitamin B_1, are interesting and important scientifically but that their value as the basis of quantitative tests is questionable.

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FIRST RECORD OF THE BLACK WIDOW SPIDER IN MINNESOTA

DURING the past several years numerous records have been published on the occurrence of the black widow spider in the United States. While generally regarded as a distinctive southern species it had been reported from every state in the Union except Minnesota. Numerous unsuccessful attempts had been made to collect it in this state, and we can now add definite record of its occurrence here.

On May 21 and 22, 1937, the black widow spider was collected in southeastern Minnesota, in the southern portion of Houston County, a few miles north of the Iowa state line and across the Mississippi River from Wisconsin. Three female specimens were taken, at points several miles from one another. All were found on the sun-exposed sides of hills, where they had built an irregular web under a protruding stone. One specimen was sent to Professor R. V. Chamberlain, who determined it as *Latrodectus mactans texanus*.

A method by which the black widow spider may become further distributed is shown in the finding of a female *Latrodectus mactans* at Hallock, Minnesota, the specimen having been carried from Mississippi in a truck-load of bee-hives.

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SCIENTIFIC BOOKS

FOREL

August Forel. Out of My Life and Work. Translated by BERNARD MIALL. W. W. Norton and Company, New York. Pp. 352. 1937.

FOR fifty years past we have known of Forel as one of the great leaders in entomology, specializing in ants, which he studied from all parts of the world, describing over three thousand new forms. We have known of his patient investigations of the life histories and habits of ants, and from various sources have come intimations of his unique personality. We have been told how he was led, by his experiences as physician to those mentally deranged, to take up the fight against the use of alcoholic drinks, so that people in the opposing camp nicknamed him "The Great Phylloxera." We have heard how he condemned the false standards and evil practices connected with sex, and spoke of these things in any company with a frankness which in earlier days was considered shocking.

When I was a young man, having incipient tuberculosis, I seriously contemplated residence in Switzerland. Circumstances decided otherwise, but I got so far as to read about Switzerland, and for a time almost lived there in imagination. It is curious to think how different my life would have been, had I adopted Switzerland as my country. Although well content to be an American, I have never lost my sentimental regard for that little European country, which combines so much of physical beauty with such a diversity of folks, living peacefully in a genuine republic. At all events, I have missed something by not living in Switzerland; I might have been one of the friends of Forel.

Forel was born in 1858 and died in 1931. Toward the end of his life he decided that he could best tell his own story, neither undervaluing nor overvaluing himself. He felt that he had made many friends and enemies, through his advocacy of reforms, and regretted that some might be offended by his narration. Yet, "I can not get out of my own skin, nor do I wish to." As a matter of fact the book is extremely frank in its statements of facts and its estimates of people, including Forel's nearest relatives. The reader naturally can not say whether all the judgments are sound, but the impression gained is that of a most lovable and entirely sincere personality. He describes in considerable detail his attitude toward religion, which in due course of time led him to reject Christianity altogether. Near the end of his life he adopted the world-religion of the Baha'i, which had its origin in Persia. It was between his fifth and eighth years that he began to study ants. "The social life of these insects had a great fascination for me. I did not as yet understand their habits, but I saw how they helped one another, and how they crept into their nests; and I became extremely curious as to the contents of the latter."