a yellow substance giving a characteristic test for wound gum. This plugging is progressive.

The diseased roots on the average are able to transport but one fourth the amount of water carried by healthy roots, as determined by pumping water through lengths of diseased and healthy roots.

It is interesting to note that diseased roots contain little if any stored starch, while healthy roots are rich in that substance. The result of this lack of food supply is poor growth in the spring and a progressive weakened condition. Isolations from deep-seated diseased tissue constantly yield a fluorescent bacterium. Inoculations with this organism by root-cutting and injection into the roots cause discolorations and plugging of the vascular system identical with field symptoms. Check inoculations with water, physiological salt solution and other bacterial organisms isolated from rotted crowns failed to react in this way.

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THE DEFINITION OF LOESS

THE excellent summary with reference to the "Origin of the loess of the Palouse Region, Washington," given in SCIENCE of May the first, 1925, page 469, raises again the question of the proper use of the term loess. Is a deposit in a lake properly a loess?

As Grabau[1] briefly describes recent deposits of loess, they are chiefly wind laid deposits, may contain beds laid down in shallow water and may even contain beds of sand and gravel washed in by streams. He uses the term silt[2] in describing the size of the particles apparently as the word is used in soil surveys.

The present writer believes it is time to use the name loess with a definite meaning: a wind-laid deposit of loosely arranged, angular particles of calcareous silt loam typically intermediate in fineness between sand and clay, of uniform mechanical composition, often with color changes revealing faint lamination, and with a tendency to break off in vertical slabs.[3] This accords with the general use of the term. With the loess may be associated sheets of gravel which are not loess, but water laid. With it may also be associated beds of water-laid silt with shells of fresh-water molluscs. With it also may be associated a glacial boulder, but this boulder, though on the loess and surrounded by loess, is not loessial.

Failure to make such distinctions has been the occasion of misunderstandings in the past. The loess along Missouri River was in the early days thought to be a lake deposit. Later it was recognized as a wind-laid deposit with all the peculiarities of such a deposit. Later still, patches of silt laid down elsewhere in sheets of water in loessial areas and containing fresh-water instead of air-breathing molluscs were spoken of as if loess. It is well to distinguish between these classes of deposits and to use distinctive terms.

In describing any deposit we may recognize the source from which the material was derived, but the later deposit does not retain as its name the name of the material from which it was derived. A bed of sea sand is a marine deposit of sand regardless of the crystalline rock from which the sand was originally derived, and it is a marine deposit regardless of the agencies of river action that may have been involved in transportation. The fine deposits laid down by the wind are loess, regardless of the source of the material from which that loess was derived. It may have come from weathering of ancient rock, it may have come from soil or from alluvium along a recent river, but when laid down by the wind it is loess. When washed out later and laid down in water by a river it becomes a river silt (alluvium if on a flood plain). When laid down in the quiet waters of a lake it becomes a lake silt, along with such portions as may have been transported to that lake by streams, whatever the source of that fine material. Often one may be uncertain as to whether a given bed is a true loess. Then suitable terms should be used and the bed described accordingly.

If the term loess is thus confined to fine wind-laid deposits, as described, the term will have a definite meaning, which will accord with the general significance of the term.

JOHN L. TILTON
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[1] A. W. Grabau, "Principles of Stratigraphy," pp. 565–568.

[2] *Idem.*, p. 565.

[3] Varied from Grabau, *idem*, p. 565.

QUOTATIONS

WHAT IS REASON FOR?

ABOUT sixty years ago Huxley made his famous answer to a precursor of Mr. Bryan. Wilberforce, Bishop of Oxford, had appeared before the British Association for the Advancement of Science and in the manner of Mr. Bryan congratulated himself that he was not descended from a monkey. Darwin himself was absent on account of illness, but Huxley was in the hall, and when Wilberforce had finished he rose and said in substance the following:

> If I had to choose, I would prefer to be a descendant of a humble monkey rather than of a man who employs his knowledge and eloquence in misrepresentation of those who are wearing out their lives in the search for truth.