substitute for lignum vitae in the heartwood of *Xanthostemon verdugonianus*, which weighs 77 pounds per cubic foot. The tree is large, with a diameter of 45 inches, and a length of stem of 25 to 30 feet. It occurs in the southern islands of the archipelago.

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SPECIAL ARTICLES

A FOSSIL GAR-PIKE FROM UTAH

Some time ago Professor R. D. George obtained in Utah a fine specimen of *Lepisosteus* preserved in a block of limestone. The fossil is of particular interest because the stone is being quarried by the Western Lithographic Stone Company, yielding slabs highly serviceable for lithographic purposes. The age of the formation had not been determined until the fish was examined, but it is now safe to say that it is Middle or Lower Eocene. The specimen was obtained twelve feet from the surface, three miles northwest of Tucker, Utah. It lacks the head, but is otherwise in very good condition. In all respects, it agrees excellently with *Lepisosteus simplex* Leidy, as described and figured by Eastman.[1] Eastman's excellent figure, except for having the head, might almost have been taken from our specimen. The smooth scales, with occasional minute pits, are in exact agreement, as are the characters of the fins, etc.

L. simplex was found in the typical Green River locality in Wyoming, according to Eastman, though Hay ascribes it to the Bridger Eocene. There is a species described from Utah, *L. cuneatus* (Cope), which has smooth scales, and it is at least very much like *L. simplex*. This *L. cuneatus* comes from the Manti shales, Manti being some fifty miles south-southwest of Tucker. Eastman (*loc. cit.*) ascribes this to the Miocene, but Cope considered it Eocene, and it has been held that the Manti shales are of the same age as the Green River. It may be that the true Green River extends from Wyoming to central Utah, and that *L. cuneatus* is the same as *L. simplex*.

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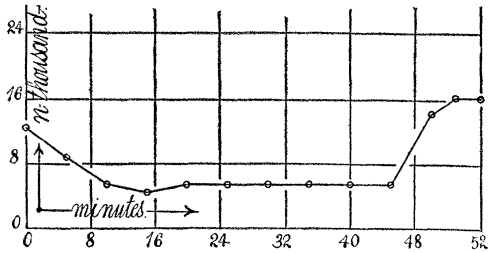
[1] *Bull. Mus. Comp. Zool.*, XXXVI., No. 3.

THE NUCLEATION OF A CLOSE LECTURE ROOM

Recently, at the request of Professor Barus, I made a series of measurements on the nuclei in the air of a crowded lecture room. There were over a hundred students in attendance and the ventilation was not sufficiently brisk to obviate the occurrence of somewhat offensive closeness at the end of the hour. The object of the investigation was to determine whether any solid or liquid nuclei were thrown off by the many lungs in action, sufficient to be detected by the coronas of the fog chamber in the presence of the natural nucleation (largely inorganic) of the lecture room.



The method of investigation consisted in aspirating the air of the room continuously through the fog chamber and examining it by exhaustion from time to time. The result may best be given graphically by laying off the nuclei in thousands per cubic centimeter in a way to show their variation in the lapse of minutes of time.

The figure begins with a moderate measure of dust during the desultory entry of the members of the class. But throughout the lecture hour the nucleation diminishes. Evidently there is subsidence of dust (in part into the lungs of the students who virtually cushion the floor), but no corresponding evolution of nuclei as resulting from the respiration of this animated carpet. At the close of the lecture, when the class rises hilariously as a body to depart from the place of torment, they literally raise the dust again, in much larger quantity than on entering.

Unfortunately it is impossible to separate the organic from the inorganic dust content of this atmosphere for the present purposes. The only conclusion attainable is, therefore, that there is no appreciable evolution of non-gaseous matter, but rather an absorption of nuclei