A NEW TRIGONOCARPUS FROM OHIO.

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In the collections of the Geological Museum of the Ohio State University there is the cast of a fossil seed that appears to be new to science. This seed is from the Upper Carboniferous (Pennsylvanian) at Steece, Lawrence County, Ohio. It was presented by E. L. Lambert through E. B. Willard and is number 10,429 in the collections. No additional information is definitely known about its history. However, Lambert was mine superintendent for Willard and they were mining the Vanport limestone at Steece. There the Vanport limestone is overlain by a sandstone. (The entrance of the mine is still open but the rest is flooded.) It is probable that the seed is from this sandstone above the Vanport limestone and below the No. 5 coal. The sandstone is the Kittanning sandstone of the Pennsylvanian Survey.

This seed-cast is rather unusual as it is much larger than most and the ribs are double, although only three in number. I have referred it to the genus *Trigonocarpus* although it may represent a species of *Radiospermum*. The presence of an opening in the base might be interpreted as where the pith entered the seed, in which case it should be referred to *Radiospermum*. However, investigation on one side of the seed where it was damaged seems to indicate lack of internal structure, therefore I have referred it to *Trigonocarpus*.

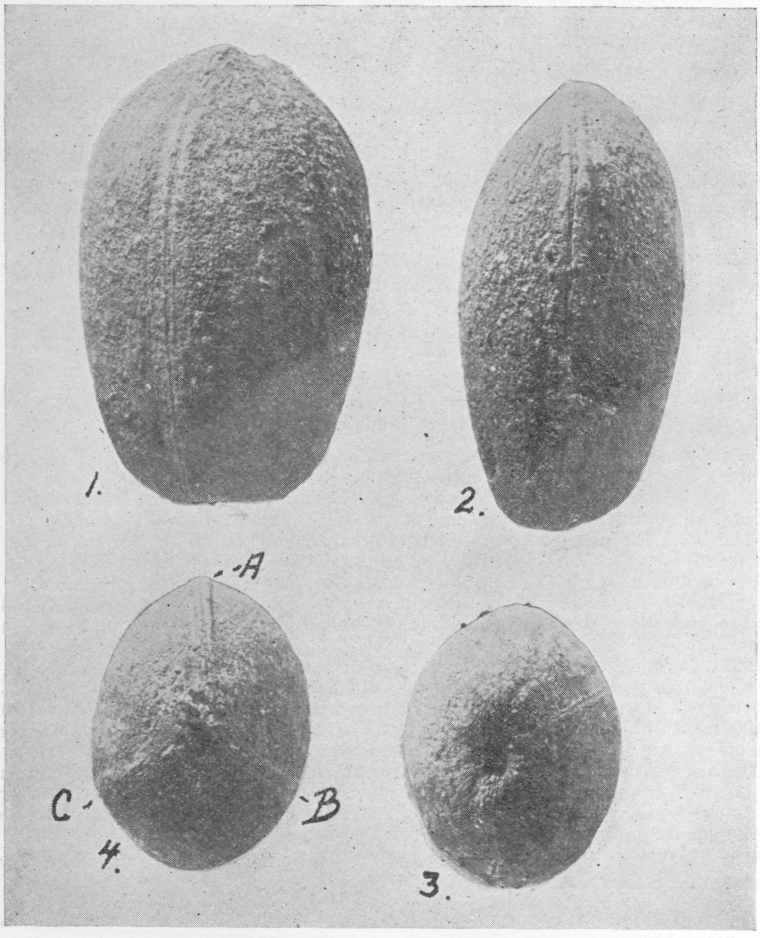
The cast is of sand with abundant ferruginous cement. The surface is composed mainly of the cement.

As far as I can ascertain it is a new species and cannot be referred to any described form. The nearest described form is *Radiospermum ovatum* (Lindley and Hutton) as described and figured by Arber, although my seed lacks structure. It may be described as follows:

Trigonocarpus steecensis W. Berry n. sp.

(Figures 1, 2, 3 and 4.)

From the side, elongate-ovoid in form, slightly broader towards the apical end. In cross section elliptical. Surface crossed from apical end to base by three prominent double ribs—A, B and C. Double rib A is composed of two ridges each about 1 mm. broad separated by a narrow groove averaging 0.5 mm. wide, from which towards the apical



Trigonocarpus steencensis W. Berry, n. sp.

Fig. 1. Side view showing rib B.
Fig. 2. Edge view showing rib A.
Fig. 3. Basal view.
Fig. 4. Apical view, double ribs A, B, C, labeled. About natural size.

end rises a narrow fin or wing, about 0.5 mm. wide and broken off elsewhere. The entire length of the groove is occupied by what appears to be the continued base of this wing. Double rib B is about 130 degrees from A, and C about 90 degrees from B. The double ribs are all alike, although the width of them may vary slightly. These double ribs rise at the base of the cast, though all but B are very faint at the base, and tranverse the surface towards the apical end, where they are lost as the apical end is not entirely preserved. About 43 degrees on either side of A is a shallow groove, the one between A and B being the most pronounced. This groove is about 2 mm. broad and 0.75 mm. deep and runs from near the base to within 2 cm. of the apical end. The groove between A and C is much less clearly marked and is slightly wider, otherwise like the first one.

Balance of the surface shows the rounded sand grains of the cast.

Apical end more or less destroyed, enough preserved to show that the double ribs came almost to it, there is just a faint suggestion that the double ribs enclosed a small "pollen chamber."

Basal end shows the three double ribs coming in towards the center, which is an irregular oval opening about 4 mm. by 2 mm. This hole penetrates about 4 mm. into the cast.

Length, 6.5 mm.; breadth, 4.4 mm.; depth, 3.5 mm.

Living Machinery.

The preparation and radio-broadcasting of a series of talks on biological principles lead to their subsequent collection and publication in book form. The result is a pleasing collection of essays covering in popular form a wide variety of subjects, all centering on biology and its modern applications. The author states that the book is designed to raise questions rather than to answer them, and it must be said that it does just this. The essays are in effect short introductions to the various subjects. The reader is apt to find that just as he thinks the author is warming up to his subject, the essay abruptly closes. However, the arousing of a desire to know more about the subjects treated is one of the best features of the book.

A few poor analogies are used, such as comparing the variability of heredity with the words possible from combinations of letters of the alphabet, in which it is forgotten that letters may be missing from words, but that one or another of each set of allelomorphs must be present in each organism of a species. An occasional loose statement is found, such as the use of "morons" where obviously "cretins" was meant. Teleological statements appear freely. However, these are minor defects, and the book will provide entertaining reading not only for the layman but for the trained biologist as well. Especially good are the chapters on foods, and the one on parasitism.—L. H. S.

The Machines We Are, by ROBERT T. HANCE. xvi+382 pp., New York, Thomas Y. Crowell Co., 1932. $3.00.