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DISCUSSION AND CORRESPONDENCE

FOSSIL PLANTS IN THE PANAMA CANAL ZONE

EXCEPT for the incidental mention by Pilsbry and Brown of lignified nuts in their paper on the Mollusca I know of no record of any remains of fossil plants having been found in the Canal Zone, notwithstanding the fact that the numerous Tertiary tuffs would seem to furnish an admirable matrix for the preservation of leaf impressions.

During 1912 Dr. M. I. Goldman, of the Johns Hopkins University, visited the Isthmus and in connection with his work on rock weathering devoted considerable time to a search for fossil plants along the Canal with the results indicated by the following note.

Since fossil plants of Tertiary age from the tropics have not been collected or studied to any large extent and since the Tertiary floras of Central America have a most important bearing on both the phytologic and geologic history of southeastern North America during the Tertiary, a preliminary announcement seems justifiable.

Fossil plants seem to be somewhat sparsely but widely distributed along the canal and identifiable forms were collected from the following localities:

1. East wall of the Culebra Cut just north of station 1760 and opposite Culebra.
2. West wall of cut below Miraflores locks, where the plant-bearing tuff outcrops for about one fourth of a mile.
3. Culebra Cut under the steep hill just north of Paraiso, associated with specimens of the pelecypodian genus *Phacoides*.
4. Gatun Dam borrow pits.

The best material comes from the first of these localities and the least satisfactory from the last. The collections have not been critically studied, since it is hoped that more extensive collections will be sent in by the resident geologist of the Canal Commission.

The following forms have been recognized

in a preliminary study of the collection: A fine large species of *Guatteria* which is present at several localities; a well-marked species of *Myrtaceæ*, probably representing the genus *Calypttranthes*; a species of *Nectandra*; a species of *Rhamnaceæ*; a characteristic small-leaved species of *Ficus*; another of *Ocotea*; a species of *Rubiaceæ* and one of *Melastomaceæ*. Petrified wood was also collected and although but three slides have been cut these show apparent identity with a species described from the Oligocene of the Island of Antigua.

None of the material lends any support to the view, at one time prevalent, that some of the Isthmian beds represent deposits of Eocene age, and while the various plant-bearing beds are probably not exactly synchronous, their floras in so far as they are known from the present small collection all appear to be referable to the Oligocene.

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WHAT GRADES REPRESENT

THE following considerations have been of service to the writer in the diagnosis of the difficulties encountered by students in meeting the scholastic requirements represented by grades, and the identifying of the obstacles has often assisted in their removal.

It is not necessary in this discussion to assume any more definite or uniform system of grading than that 100 per cent. represents a perfect grade and that there is a minimum grade required to entitle the student to credit for the course. Half way between these is what may be called an average grade. This does not mean the grade that a class would average under the usual conditions, but what a class might be expected to average if all members gave all the officially allotted time (or a reasonable time) and their best effort to the subject—quite a different matter! The instructor should make his demands such that the student of average qualifications using his best effort all the allotted time would receive the average grade—half way between the passing grade and 100 per cent.