on it and then to represent their actions by force-vectors, neither the mental conflict nor the confusion about the number of forces involved is likely to appear.

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EFFECT ON ROOT FORMATION OF RETREATING CUTTINGS WITH GROWTH SUBSTANCES

RECENT studies on the effect of growth substances on root formation have shown that an initial basal treatment with these substances is effective in inducing roots on many plants which are difficult to root. This initial treatment usually consists of soaking the bases of the cuttings in .01 to .05 per cent. water solutions of these substances for about twenty-four hours. There are, however, many plants, such as grapefruit and the sweet orange, which respond very little or not at all to such an initial treatment. Cuttings of these plants may show some callus formation at the basal cut surface within three to four weeks after the treatment, but initiate no, or very few roots. It has been found, however, that by retreating such cuttings at varying periods after the initial treatment more roots are formed than by an initial treatment only. In an experiment with Hamlin sweet orange cuttings, the untreated lot produced no roots after six weeks in a propagating frame with bottom heat; cuttings initially treated with .02 per cent. indole-3-acetic acid produced one to two roots; and cuttings retreated three weeks after an initial treatment, three to six roots. The data when tested according to student's method show odds of 4,999 to 1 that the difference indicated between initial treating only and retreating is due to the treatment and not to chance variation. Similar results from retreating have been obtained with papaya and Camellia cuttings. Experiments with other plants are now in progress, including avocado and mango, which have not responded to initial treatments with the usual growth substances.

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NEW FOSSIL LOCALITIES IN THE DURHAM TRIASSIC BASIN

T. R. JONES in 1862[1] noted the presence of *Estheria ovata* (Lea) and of ostracoda near Egypt, N. C., in that part of the Deep River Triassic Area now known as the Cumnock Basin. He referred the octracoda, which had been described by Emmons and others as "Cyprides," "Cytheres" and "Bairdias" to the genus *Candona*(?) and erected the species *rogersii*. Prouty in 1928[2] delimited the Durham Triassic Basin as that portion of the Deep River Area lying northeast of Sanford, N. C., and in 1931[3] reported the presence therein of fresh-water crustacea at a single locality approximately three quarters of a mile west of Nelson, N. C. The crustacea, one a phyllopod *Estheria ovata* (Lea), the other a smooth-shelled ostracod belonging to the family Cypridae, occur in a fine, dark-red, micaceous and carbonaceous shale.

During the spring of 1937, two previously unreported fossil localities were discovered within the Durham Basin. One half of a mile west of Lowe's Grove, N. C., on State Highway 54 there occurs a fine, white to brown, yellow-mottled, slightly metamorphosed shale containing *Estheria ovata* (Lea) and smooth-shelled ostracoda of the Cypridae family. One quarter of a mile east of the same village on State Highway 54 there occurs a fine, dark-red, carbonaceous shale containing a similar fauna.

The ostracoda of the Lowe's Grove localities, as well as those of the Nelson locality, seem to represent a single species and should probably be referred to *Candona ? rogersii* Jones.

The Lowe's Grove Beds are certainly equivalent in age to the Nelson Beds. In agreement with Prouty, the writer believes the fossiliferous shales of the Durham Basin can be correlated with the Cumnock Formation of the Cumnock Basin to the south and with similar fossiliferous shales of other Triassic Areas of Eastern North America.

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DISTRIBUTION OF REPRINTS OF PAPERS BY THE LATE BASHFORD DEAN

THERE have come to me for distribution reprints of twenty short papers published by Dr. Dean from 1908 to 1912. These comprise mainly biographies, book reviews and articles on fossil fishes, evolution and a few miscellaneous subjects. If those who are interested will look up titles for these years in Dr. Dean's bibliography in Volume I of the Dean Memorial Volume and will indicate their preferences, I will supply these so far as the articles are available. Failure to send desired reprints will mean that these are not available.

I should like to put these reprints in the hands of students—especially the younger men—to whom they might be of value.

E. W. GUDGER

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[1] T. R. Jones, "A Monograph of the Fossil Estheriae," Paleontological Society of London, 1862, p. 123.

[2] W. F. Prouty, Abstract, *Bull. Geol. Soc. Amer.*, 39: 210–211, 1928.

[3] W. F. Prouty, *Am. Jour. Sci.*, Fifth Series, 21: 126, 487, 1931.