



Fig. 2. Elongation growth of pea shoot segments kept for 24 hr. in solutions containing varying amounts of trichloroacetic acid, and 2:4 dichlorophenoxyacetic acid

response curves (see Fig. 1) the interpretation of the interactions is complex and a detailed discussion will be published elsewhere, but one aspect is illustrated in Fig. 2. When 2:4 dichlorophenoxyacetic acid is added at concentrations of either  $4.5 \times 10^{-6} M$  or  $4.5 \times 10^{-4} M$ , then the normal inhibitory effects of increasing concentrations of trichloroacetic acid are largely eliminated. Indeed it is evident that there are combinations where the increase in extension growth brought about by the growth regulator alone will be accelerated by the addition of trichloroacetic acid at a concentration which by itself would have been markedly inhibitory.

It is suggested that the phytotoxic properties of trichloroacetic acid may be related to the auxin status of the plant and that herbicides consisting of mixtures of trichloroacetic acid and 2:4 dichlorophenoxyacetic acid may have definite disadvantages.

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### A Cladoceran from the Plankton as a Possible Indicator for the Presence of the Nile Flood off the Israeli Coast

DURING the examination of the plankton collected in the course of the monthly cruise off the Israeli coast in September 1951 an unusual abundance of a cladoceran, identified as *Podon polyphemoides* (Leuck.), was observed in some of the samples. The organism was found to be present along the coast from Askalon in the south to Athlit in the north, being most abundant at a depth of 10 fathoms, its incidence gradually decreasing towards the 75-fathom depth-line.

The relative scarcity of Cladocera in the marine plankton of this part of the Mediterranean in the

preceding and following months suggests that the sudden mass occurrence of *Podon polyphemoides* in the plankton of the coastal waters of Israel at this time of the year is due to a current of water flowing along the coast in a northerly direction. This current is induced by the opening of the dams in the Nile delta a few weeks earlier, thus releasing a powerful flow of fresh water into the sea<sup>1</sup>.

A striking correlation has been found to exist between the occurrence of *Podon polyphemoides* and a substantial drop in salinity caused by the Nile flood by the time it reaches the stations where sampling took place along the coast.

The organism is mentioned by previous investigators as occurring occasionally in the plankton of the Suez Canal<sup>2</sup> as well as in the plankton of the eastern and western harbours of Alexandria in the month of March<sup>3</sup>. Steuer<sup>4</sup>, however, failed to find *Podon* in the plankton while working in that region, but mentioned in another place the ability of the organism to live both in fresh and salt water<sup>5</sup>. The euryhaline and neritic characteristics of this organism have also been stressed by Ramner<sup>6</sup>.

Specimens of this cladoceran were sent to Prof. V. Brehm, who kindly confirmed my identification.

It is to be assumed that the mass occurrence of *Podon polyphemoides* along the Israeli coast during the month of September is connected with the appearance of the Nile flood waters in this region, and may serve as a possible indicator for the detection of the Nile flood in this part of the Mediterranean and the direction followed by the current in its northerly course. Work on this subject is continuing.

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### Anaerobic Growth of *Escherichia coli* in the Presence of Certain Acids

CERTAIN coliform bacteria grow readily under anaerobic conditions in synthetic media containing glucose, ammonium sulphate, phosphate and other necessary inorganic ions. The extent of growth, however, is limited to a definite size of cell population even in the presence of excess concentrations of the substrates, the excess remaining unchanged in the media. This phenomenon has been ascribed to the saturation of the hydrogen acceptor mechanisms, and the evidence supporting this contention is strong<sup>1</sup>. The extent of growth depends also on the initial pH and the buffer capacity of the media, being less if the initial pH or the buffer capacity is lower. The dependence on buffer capacity has led to criticism of the above suggestion<sup>2</sup>. The growth of such cultures is accompanied by production of acid, but their final pH depends on the initial, and growth may stop at a higher pH than will permit growth in a fresh medium. Thus, though hydrogen ion concentration is undoubtedly a factor, cessation of growth cannot be due solely to its increase.