Compounds Capable of Plant Amylase Inhibition

It has been reported (*Science*, 1950, 111, 118) that 2,4-dichlorophenoxyacetic acid inhibits the alpha and beta amylase activity in the stems and leaves of the red kidney bean plant. In this connection it seems pertinent to call attention to our little-known report (Volker, J. F., and Murray, D. P. Salivary amylase inhibition. *Tufts Dental Outlook*, 1947, 21 [2], 3) in which we were able to demonstrate that indole nucleus containing plant hormones, including indole acetic acid, indole butyric acid, and indole propionic acid, were effective anti-amylases when added to refined starch in concentrations as low as 0.01%. Comparable anti-amylytic ability was also shown for similar concentrations of 2,4-dichlorophenoxyacetic acid, triiodobenzoic acid, naphthalene acetic acid, naphthoxyacetic acid, and nicotinic acid.

In view of these observations, it is suggested that in addition to 2,4-dichlorophenoxyacetic acid other of the above-mentioned compounds may be capable of plant amylase inhibition.

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Discovery of Early Cretaceous Mammals and Frogs in Texas

Following a suggestion by Glen L. Evans, of the Texas Memorial Museum, the Early Cretaceous Trinity Sands of Montague County, Texas, were briefly investigated for turtle remains early in November. While fragments of an interesting turtle were being collected, the most fortunate discovery of a lower jaw of a triconodont mammal was made. On a return visit, a few days later, a second and more complete jaw of the same form was secured. Mesozoic mammals are among the rarest and most interesting of vertebrate fossils. These triconodonts are the first mammals discovered in the Early Cretaceous of the New World. The only other known mammalian remains of this age are five isolated teeth from a locality in southern England. Until now, triconodonts were known only from the Jurassic and the latest Triassic.

The triconodonts are associated with fragmentary remains of land, fresh water, marine, and aerial forms. Crocodiles, dinosaurs (carnosaurs and ornithopods), pterosaurs, turtles, frogs, and fish are represented. The vertebrate fauna occurs here in marly sands that probably were deposited in the intertidal zone of a transgressing Early Cretaceous sea. The facies is in general similar to that of the mammal-bearing beds of the German Rhaetic and of the English Stonesfield Slate.

The discovery of frogs in these Trinity Sands may well prove to be of the utmost significance, since no members of this order have hitherto been reported from the Cretaceous period. In view of the fact that frog remains are known from Jurassic and even older deposits, the present finds may help to fill a conspicuous gap in our knowledge of the history of the order.

Since only a few days were spent in the region, there is every reason to hope that the new triconodont will become better known when intensive collecting is undertaken and that perhaps other mammals, more significant in the early history of the living orders, may be discovered. Work on a much more extensive scale is being planned by the Chicago Natural History Museum in northeastern Texas, in cooperation with E. H. Sellards, director, and Glen L. Evans, assistant director, of the Texas Memorial Museum.

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Arctic Ice Drift and the Humboldt Current

Exception must be taken to the article by Lalla R. Boone, "A Prediction Regarding the Humboldt Current" (*Science*, 1949, 110, 642), insofar as data collected by the International Ice Patrol are used by the author in attempting to show a relationship between "ice outbreaks in the Arctic" and abnormalities in the Humboldt Current three years later. The North Atlantic ice seasons of 1922 and 1938 are cited as having been unusually heavy and associated with the 1925 and 1941 failures of the Humboldt Current. The area kept under surveillance by the International Ice Patrol during the ice season is in the vicinity of the Grand Banks of Newfoundland and for purposes of comparing different years, the number of bergs reaching positions south of the 48th parallel has been estimated for each year. The berg counts for each year from and including 1900 are shown graphically in an article entitled "Arctic Ice and Its Drift Into the North Atlantic Ocean." The 9th edition of this article was published as a supplement to the May, 1949, *Pilot Chart of the North Atlantic* and the article is published as such a supplement each spring. The average for the 50-year period 1900–1949 is about 430 bergs per year. The numbers for the years 1922 and 1938 were 523 and 664 respectively and therefore greater than average. There seems no reason why these two years should be singled out when many other years also have had about the same or a larger number of bergs, as for instance the following:

Year	Berg Count	Year	Berg Count
1903	802	1929	1,351
1905	845	1932	514
1907	638	1934	560
1909	1,024	1935	875
1912	1,019	1939	850
1913	550	1943	840
1914	731	1944	700
1921	746	1945	1,083
1928	515	1948	523

The years 1922 and 1938 are described as being characterized by unusual outbreaks of arctic ice in the North Atlantic, presumably from reports of the International Ice Patrol on conditions in the region of the Grand Banks. This region is the terminus for the comparatively few bergs which survive the journey of possibly two and probably three years. Therefore, if one may presume that the number of bergs completing this journey is related to the number beginning it, any unusual number of bergs calved from their parent glaciers in 1922 and 1938 would be reflected by unusual berg counts south of 48° in 1924 or 1925 and 1940 or 1941 respectively. The berg counts for these years were:

Year	Berg Count	Year	Berg Count
1924	11	1940	2
1925	109	1941	2

There are, however, many variable factors combining to produce the more than 90 percent mortality which the bergs suffer during their two- or three- year journey from Greenland to the Grand Banks and these factors have yet to be evaluated quantitatively. Fluctuations in these factors may or may not leave valid the presumption that a large number of bergs calved in any one year will be reflected as a large berg count south of the 48th parallel two or three years later. If it is valid and if the author proposes to gauge the size of the crop of northern bergs produced in 1949 by the number which appear in the Grand Banks region, the success or failure of the prediction made will not be known until 1951 or 1952; but if the author means that an outbreak of ice was due in the Grand Banks region in 1949, then the prediction has already failed, since only 47 bergs are estimated to have crossed the 48th parallel in 1949.

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Reaction Time of the Common Housefly (*Musca domestica*)

During the course of unrelated ballistic experimentation, the opportunity presented itself to observe the reaction time and rate of wing stroke of the common housefly by means of high speed cinematography. The fly was walking near the edge of a flexibly supported plate of bullet-resistant material approximately 6 in. square. A bullet fired at the center of the plate approximately 3 in. from the fly caused the flexibly supported plate to be jerked away from the fly's feet with great rapidity, leaving the fly suspended in the air.

Analysis of the high speed motion picture record (about 2,400 frames per sec) revealed that the fly remained suspended in the air for a short time. It was then caught in what appeared to be a downdraft and commenced to fall, without showing any sign of wing activity. It had fallen perhaps $\frac{1}{8}$ in. before it began to beat its wings. This occurred 21 msec after its support had been jerked away. About 1 msec before the first wing motion, it appeared to extend its rear legs to the utmost, as though attempting to spring from the nonexistent support. Although camera focus was not good enough to reveal fine detail, the fly appeared to execute this motion three times at intervals of slightly more than 1 msec. These motions may represent a stereotyped pattern of launching, carried out without realization that the support was no longer in position (Fraenkel, G. *Z. vergl. Physiol.*, 1932, **16**, 371).

Shortly after (about 0.01 sec later) the plate rebounded and nudged the fly, turning it upside down. Despite this, and despite the apparently strong air currents buffeting it (caused by the violent movement of the plate), the fly continued to beat its wings strongly. It finally righted itself accidentally by colliding with the support and flew out of view of the camera. Its wing beat frequency through these vicissitudes continued approximately constant, as far as could be determined, at about 212 strokes per sec.

Unfortunately no record had been kept of the room temperature, but this is believed to have been in the neighborhood of 75° F.

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[1] The author wishes to express thanks to Captain Charles W. Tillett, III, for making the record available for analysis; and to Dr. Leigh Chadwick for initiation into some phases of the literature concerning *Musca domestica*.

I. Q. and Month of Birth

In a recent article (*Science*, 1949, **110**, 267) C. A. Mills claims impressive advantages for children conceived during the cold months of the year. He says, "In any field of accomplishment one investigates, the advantages of cold-weather conception stand forth in bold relief."

We have some experience in the Philadelphia public schools that tends to give mild support to this statement. Children admitted to school in September consistently have slightly higher average scores on both aptitude and achievement tests than do children admitted to school in February. Pupils admitted in September generally are those who were conceived during the months of September through March. Children admitted in February are those conceived during the months of April through August.

As was true of E. Huntingdon's studies (*Season of Birth*, New York: Wiley, 1938; and *J. genet. Psychol.*, 1944, **64**, 323), there are factors other than the season of birth that tend to explain why children in the classes admitted in September have higher average scores in tests than children in classes admitted in February. For example, the number of pupils admitted in September is larger than the number admited in February because such admissions represent a seven-month crop of births in contrast with the five-month crop in February. The larger wave of enrollment in the September classes tends to be equalized with the smaller wave in the February classes because of retardation and failure. More pupils fail from the September classes into the February classes than fail from the February classes into the September classes. The result is that the September classes normally have a smaller proportion of low I. Q.'s than the February classes.

In order to analyze further the possible effect of cold weather on conception a part of Pintner's study (Pintner,