Council Committee on Salt Requirements of Plants) each plant would receive 57 c.c. per day.

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NOTE ON THE SYNTHESIS OF ETHYL BUTYRATE IN EGG SECRETION

IN our analyses of egg secretion, Miss Woodward[1] and I[2] have isolated an enzyme of the lipase group. The material, precipitated as a white powder, is soluble in both sea-water and fresh. In the presence of this "lipolysin," droplets of egg fat decrease in diameter while the hydrolysis of other neutral fats and the cleavage of ethyl butyrate are measurably accelerated.[3]

Since lipolysin is a parthenogenetic agent;[1, 4] since the unmodified egg-secretions also have parthenogenetic[5] and lipolytic[3] powers; and finally, since eggs with secretions removed by brief exposure to charcoal are completely sterile,[3] it seems likely that lipolysis plays some rôle in the normal initiation of development.[1] However, the evidence that egg-secretions have these powers is still incomplete. It has not been reported whether, under conditions significant for fertilization theory, the effects already observed are reversible.

Accordingly, I prepared egg-secretion as free from contamination as possible and used chloroform to inhibit bacterial action. To 10 or 15 c.c. of this, I then added, in one set of experiments, .5 c.c. of absolute ethyl alcohol; in another, 5 c.c. of 2N. Butyric acid was introduced last of all. The final concentration of the acid was roughly .25 N. and .4 N.

The acidity of the systems was, of course, immediately reduced by the salts present in both the secretion and the sea-water. Under the circumstances then, the loss in total acidity has no meaning for the problem in hand. Only differences are important, and, if in the presence of egg-secretion, a portion of the butyric acid is transformed into butyric ester, the tubes in which this occurs should require less alkali than the controls in order to reach the turning point, P_{H_7}, of di-brom-thymol-sulpho-phthalein.

The differences of acidity actually found between 10 c.c. of control and 10 c.c. of digest, in one case, after 40 minutes at 20° C., amounted to .8 c.c. NaOH N/20; in another, after an hour, to 2.4 c.c. NaOH N/20, in both instances, in favor of the controls.

Absolutely, these discrepancies are small, but even greater differences might fail to be convincing, for conceivably, the organic constituents of the secretion, still largely unknown, might in some way destroy or otherwise remove butyric acid from the reaction system. Fortunately, however, ethyl butyrate has an odor so penetrating and characteristic that even minute traces can be unmistakably detected. By this delicate test, the ester, regularly absent from the controls, was present in noticeable quantities in the digests with secretion and was easily recognized by others not familiar with the experiments. For eighteen hours the ester smell continued to grow in intensity.

On the basis of these results, I attribute to egg-exudate the power to accelerate the synthesis of ethyl butyrate. This is neither more nor less than might be expected since the same exudate also accelerates the corresponding hydrolysis.

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FEBRUARY 2, 1922

1 Woodward: *J. Exp. Zool.*, Vol 26, pp. 459-501.
2 Glaser: *Am. Nat.*, Vol. LV, pp. 368-373.
3 Glaser: *Biol. Bull.*, Vol. XLI, pp. 63-72.
4 Woodward: *Biol. Bull.*, Vol. XLI, pp. 276-279.
5 Glaser: *Biol. Bull.*, Vol. XXVI, pp. 387-409.

NATIONAL ACADEMY OF SCIENCES

At the annual meeting of the National Academy of Sciences held in the U. S. National Museum, Washington, on April 24, 25 and 26, papers were presented as follows:

The new building of the National Academy and the National Research Council: C. D. WALCOTT, President of the Academy. The erection of a magnificent building, costing $1,300,000, as the home of the National Academy of Sciences and the National Research Council, will shortly be begun on the square bounded by B and C streets, 21st and 22d streets, northwest, Washington. The