

It was supposed that the skeletal structures united in the same manner as the archentera. The evidence furnished by *Toxopneustes* however clearly shows that in this species at least no fusion of the skeletal parts occurred. Instead some very interesting changes took place which may be stated briefly as follows: One of the pair of fused larvæ developed normally in every detail, the other developed in nearly every instance, incompletely. An almost perfect series of fused larvæ were obtained in which the incomplete pluteus lacked more and more of the characteristic parts that constitute the perfect larval skeleton; and the order of their disappearance was in the reverse order of their appearance in ontogeny.

The union of the two larvæ involved the approximation of their branched and complex skeletons, whose parts frequently overlapped but never fused.

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Metabolism studies in a case of myotonia atrophica.

By **JACOB ROSENBLOOM** and **BENSON A. COHOE**.

[*From the St. Francis Hospital, and the Laboratory of Biochemistry of the University of Pittsburgh, Pittsburgh, Pa.*]

In a thirteen day metabolism study on an individual suffering from myotonia atrophica, we have studied the nitrogen metabolism, and urinary nitrogen partition, the sulphur metabolism and urinary sulphur partition, and the calcium, magnesium, phosphorous, chlorine and fat metabolism. The creatinine excretion was normal. The only striking metabolic anomaly noted in this study was the marked loss of calcium.

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Sugar from lactic acid in human diabetes.

By **NELLIS B. FOSTER, M.D.**

[*From the Medical Service of The New York Hospital.*]

The evidence presented by experimental diabetes seems to indicate that in the transformation of amino-acids into glucose lactic acid is an intermediary step. It has also been suggested

that in the combustion of glucose lactic acid may arise from the cleavage of the sugar molecule. On account of this significant place held by lactic acid it appears of interest to investigate the relation it may hold to sugar production in human diabetes. Only cases of diabetes of considerable severity are suitable for the experiment, since in the milder degrees of the human disorder relatively large amounts of carbohydrate may be burned or stored and the sugar output is apt to fluctuate. In a patient it was ascertained that with a uniform diet for three days a fairly constant glucose excretion could be depended upon and lactic acid as the sodium salt was given on the second day of the experimental period with the result that there was a rise in sugar excretion shown by the following abstract from the protocol.

	Amount urine.	Sugar, grams.	Total N.	NH ₃ N.	Acetone and diacetic.	B-oxo butyric.
Vegetable diet. . . .	1,810	2.89	3.62	1.37	.78	0.79
Oatmeal diet.	1,450	2.80	4.80	1.22	.59	1.41
Meat diet.	2,300	6.56	11.46	1.42	.76	1.77
15 gm. Na lactate.	2,010	19.90	14.06	1.56	.82	1.49
	2,050	2.91	14.92	0.71	.86	1.97

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On some vaccinia blood pressor substances in rabbits.

By **J. P. ATKINSON** and **CHAS. B. FITZPATRICK, M.D.**

[From the Chemical and Research Laboratories, Department of Health, City of New York.]

These notes constitute a continuation of our observations on some blood pressor substances in experimental immunity, reported at the last meeting of this society, and apparently tend to confirm the same. We have endeavored to ascertain when the pressor and depressor substances appeared in the blood serum of living rabbits after they had been successfully infected with vaccinia virus. The height of the production of the vesicles from which the virus was collected was reached on the fifth day. They then rapidly healed and the rabbits appeared outwardly to be in good health.

Observations were also made to ascertain the effect of aging on the presence of the depressor substance.