

soya-bean as the glycinin is more effective in promoting growth than autoclaved soya-bean.

The proteolytic inhibitor and also any toxic factor which may be present in raw soya-bean are eliminated in the process of preparing glycinin. This is supported by the observation that the acid extract of soya-bean retards the growth of rats provided with a well-balanced diet.

Further studies are in progress to determine the nature and mechanism of action of the factors present in the extract.

Our thanks are due to Prof. V. Subrahmanyam for his interest in the work.

S. S. DE
J. GANGULY

Department of Biochemistry,
Indian Institute of Science,
Bangalore. Dec. 28.

- ¹ Hayward, J. W., Steenbock, H., and Bohstedt, G., *J. Nutrit.*, **11**, 219 (1936).
² Shrewsbury, C. L., and Vestel, C. M., Bull. 420, Purdue Univ., Agric. Exp. Sta. (1937).
³ Johnson, L. M., Parsons, H. T., and Steenbock, H., *J. Nutrit.*, **18**, 423 (1939).
⁴ Hayward, J. W., and Hafner, F. H., *Poultry Sci.*, **20**, 139 (1941).
⁵ Everson, G. J., Steenbock, H., Cederquist, D. C., and Parsons, H. T., *J. Nutrit.*, **27**, 225 (1944).
⁶ Wilgus, H. S., Norris, L. C., and Heuser, G. F., *J. Ind. Eng. Chem.*, **28**, 586 (1936).
⁷ Mashino, M., *J. Soc. Chem. Ind. Japan*, **32**, 256B (1929).
⁸ Kajizuka, S., *J. Soc. Chem. Ind. Japan*, **38**, 746B (1935).
⁹ Waterman, H. C., and Johns, C. O., *J. Biol. Chem.*, **46**, 9 (1921).
¹⁰ Ham, W. E., and Sandsteet, R. M., *J. Biol. Chem.*, **154**, 505 (1944).
¹¹ Ham, W. E., Sandsteet, R. M., and Musschl, F. E., *J. Biol. Chem.*, **161**, 635 (1945).
¹² Melnick, D., Oser, B. L., and Weiss, S., *Science*, **103**, 326 (1946).

Solvent-treated Cellulose Acetate as the Stationary Phase in Partition Chromatography

SILICA gel and cellulose have a wide application as stationary aqueous adsorbents in partition chromatography, the moving phase being an organic solvent. For many purposes a stationary organic phase is desirable, and the use of solvent-treated organic polymers to serve as supporting media for organic solvent phases has, therefore, been investigated.

Cellulose acetate, as $\frac{1}{4}$ -in. staple filaments, when treated with *n*-butyl alcohol at 50°C. for thirty minutes, cooled, filtered, pressed and washed with saline to remove excess solvent, serves as a stationary organic solvent phase. 50 gm. of this material, packed tightly in a column, was sufficient adsorbent to extract exhaustively cresol and benzoic acid from 2 litres of an aqueous 0.1 per cent cresol solution, saturated at room temperature with benzoic acid, and with addition of sodium chloride. The extracted organic substances could be eluted with aqueous alkaline eluents or by a suitable organic solvent such as ether.

A. E. Aréa Leão *et al.*¹, in the extraction of penicillin from culture media filtrates, used a suspension of "solvent-activated cellulose acetate" prepared by shaking an aqueous suspension of cellulose acetate with addition of a small proportion of suitable solvent, for example, chloroform. A chromatographic method was not used by them, and it is possible that the new technique described might prove to be an improvement on the usual solvent extraction procedure.

In general, suitable adsorbents may be prepared by treating the polymer with a solvent swelling agent at a temperature just below that required to cause aggregation of the swollen polymer particles. Cellulose

acetate may be regarded as the prototype of a wide range of polymers that could be utilized in the manner described. W. Coltof² may be consulted for comprehensive data on the effect of solvents on cellulose acetate. A wide industrial application of this technique to solvent-water partitions is obvious.

I wish to thank British Celanese, Ltd., for generous gifts of polymers used in this department, and for information.

R. J. BOSCOFF

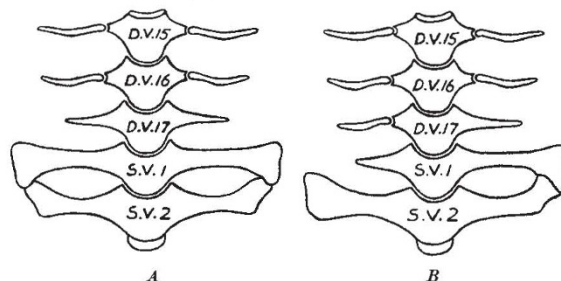
Endocrine Unit, London Hospital,
London, E.1.
Jan. 16.

¹ Aréa Leão, A. E., *et al.*, *Rev. Brasil Biol.*, **5**, 149 (1945).

² Coltof, W., "Acetate Silk" (Amsterdam, 1934), reviewed in *J. Soc. Chem. Ind., Lond.*, **58**, 39, 891 (1937).

Sacral Ribs of Lacertilia

SOME authors consider the lateral processes of sacral vertebrae in Lacertilia to be fused sacral ribs. Others deny this view and consider them to be nothing but well-developed transverse processes. While investigating the vertebral column of several individuals of the lizard, *Agama stellio*, I found one of them which supports the first view.



Agama stellio. VENTRAL VIEW OF THE LAST THREE DORSAL VERTEBRÆ (D.V. 15-17) AND TWO SACRAL VERTEBRÆ (S.V. 1 AND 2) OF TWO DIFFERENT INDIVIDUALS

In *Agama stellio* the last dorsal vertebra possesses a pair of ribs which are completely fused with the centrum. There are two sacral vertebrae, each having a pair of well-developed lateral processes (Fig. 1 A). But in this particular individual, the last dorsal vertebra possesses two ribs, one of which is movably articulating with the centrum as all other preceding ribs do, while the other is completely fused with the centrum. The first sacral vertebra possesses two processes. The process of the right side is short, weakly developed and quite similar to the fused rib of the last dorsal vertebra referred to above. The process of the left side, on the other hand, is long, well-developed and resembles the processes of ordinary sacral vertebrae (Fig. 1 B). The right process of the first sacral vertebra can be easily homologized with the fused rib of the last dorsal vertebra, and the same is, then, true for the left process.

Therefore, the lateral processes of the sacral vertebrae of Lacertilia should be considered as sacral ribs which have fused with the centra of their vertebrae, and which have become greatly enlarged so as to perform the important function of supporting the pelvic girdle.

M. R. EL-TOUBI

Department of Zoology,
Faculty of Science,
Fouad I University,
Cairo.