solution in low dilutions and failed to diffuse through Cellophane membranes. It gave a Molisch reaction in extremely high dilutions but no protein tests in relatively high concentrations. Test for nitrogen by Nessler's method on a 10 mgm sample was negative. No reducing property was observed before acid hydrolysis but rapidly appeared on treatment with 1.0 N HCl solution. Its precipitating and skin reactive properties were not affected by autoclaving for 15 minutes at 15 pounds pressure at pH 7.0.

Serological studies indicated that the polysaccharide was a good precipitating antigen. It gave typical polysaccharide plaque-like precipitates in dilutions of 1: 200,000 when tested against sera from infected rabbits. Cross precipitin reactions did not occur with antisera against other roundworms such as *Ascaris suum, Nippostrongylus muris* or the larval tapeworm, *Cysticercus taeniaeformis*. Specificity studies with respect to the more closely allied forms such as *Trichuris* are being made at present. Although positive skin reactions were obtained in infected rabbits, the preliminary studies indicate that approximately 0.1 to 1.0 mgm of material is required to give a good reaction.

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A SPORULATION STOCK MEDIUM FOR YEASTS AND OTHER FUNGI

MOST yeasts do not sporulate freely on the commonly used stock media such as wort-agar or grape juice agar. Carrot, beet, cucumber and potato wedges, gypsum blocks, Gorodkowa slants and other media are used to induce ascospore formation. Many yeasts sporulate on carrot wedges, but some do so only on one of the other media indicated above. During the past eight months it has been observed that agar slants made from a water extract of carrots, beets, cucumbers and potatoes will induce sporulation and at the same time serve as an excellent stock culture medium. The medium is prepared by grinding equal weights of washed, but unpeeled carrots, beets, cucumbers and potatoes and then mixing with a quantity of water equal to the total weight of the vegetables used. The mixture is autoclaved at 10 pounds pressure for 10 minutes, after which the extract is separated from the solid material by use of cheese-cloth and pressure. The pH value of the extract is approximately 5.7 and the Balling degree about 4. Two per cent. of agar is added to the extract and slants are prepared. The sterilization recommended is 15 pounds for 15 minutes.

Good sporulation has been obtained on this medium within 7 days or less with several hundred yeast cultures representing species of *Schizosaccharomyces, Endomycopsis, Saccharomyces, Zygosaccharomyces, Pichia, Zygopichia, Hansenula, Zygohansenula, Debaryomyces, Schwanniomyces, Saccharomycodes, Hanseniaspora, Nadsonia* and *Nemataspora*. By using vegetable agar Roberts[1] has been able to confirm some of the observations made by Windisch[2] concerning the sporulation of *Torulopsis pulcherrima*, the type species of a non-sporulating genus. Vegetable agar contains no added nutrients. Sufficient carbohydrates, nitrogenous substances, minerals and accessory factors are present, however, to support an excellent growth and good sporulation. When used as a stock culture medium, it offers the advantage of always having available sporulating yeasts. It is reasonable to believe that the use of vegetable agar for stock cultures should retard or eliminate the loss of sporulating ability which occurs commonly when yeasts are held in culture for long periods of time.

A limited number of trials indicate that other fungi also grow well on this medium and some show a strong tendency toward increased conidium production.

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[1] Roberts, *Phytopath.* (Abs. in press).
[2] Windisch, *Archiv. f. Mikrobiol.*, 9: 551, 1938; *ibid.*, 11: 368, 1940.

NEW BOOKS

Alcohol Addiction and Chronic Alcoholism: Vol. I. Edited by E. M. JELLINEK. Illustrated. Pp. xxiii + 336. Yale University Press. $4.00.

CORNER, GEORGE W. *The Hormones in Human Reproduction.* Illustrated. Pp. xix + 265. Princeton University Press, Princeton, and Oxford University Press, London. $2.75.

DEGERING, ED. F. *Fundamental Organic Chemistry.* Illustrated. Pp. x + 485. John S. Swift Co., Inc.

EARDLEY, A. J. *Aerial Photographs: Their Use and Interpretation.* Illustrated. Pp. xxii + 203. Harper and Brothers, Publishers. $2.75.

HEINDEL, RICHARD H. *The Integration of Federal and Non-Federal Research as a War Problem.* Technical Paper No. 9. Pp. 122. National Resources Planning Board, Washington, D. C.

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NORTH, F. J., C. F. DAVIDSON and W. E. SWINTON. *Geology in the Museum.* Pp. vi + 97. Illustrated. Museums Association, Oxford University Press. $1.50.

Proceedings of the Eighth American Scientific Congress: Vol. V; Agriculture and Conservation. Illustrated. Pp. 348. Department of State, Washington, D. C.

RESSER, CHARLES E. *New Upper Cambrian Trilobites.* 21 Plates. Pp. iii + 136. Smithsonian Institution.

SMILEY, DEAN FRANKLIN and ADRIAN GORDON GOULD. *Manual of War-time Hygiene.* Illustrated. Pp. iii + 86. Macmillan Company. $1.00.

WATKINS, JOHN GOODRICH. *Objective Measurement of Instrumental Performance.* Pp. x + 88. Columbia University. $1.60.