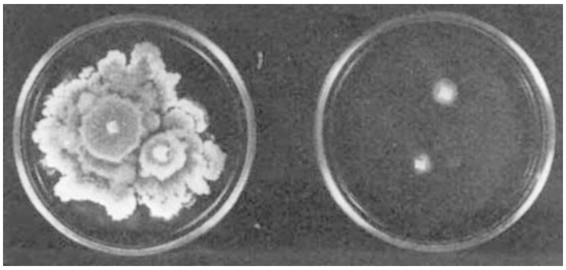

(1) (2)

Fig. 1. Contiguous fragments of infected wood-pulp on normal and selective malt agar. (1) Only *Trichoderma* growing. (2) *Trichoderma* suppressed, Basidiomycete isolated

Trichoderma was isolated which was highly resistant to *o*-phenyl phenol. Nevertheless, the medium has proved to be sufficiently valuable to be used in the routine examination of infected wood-pulp.

In general, the micro-fungi appear to be much more sensitive to this chemical than the Basidiomycetes normally encountered in this work. (The only wood-rotting fungus so far observed which failed to grow on the medium was *Merulius lacrymans*.) The concentration of *o*-phenyl phenol can apparently be increased somewhat if desired, and it is thought that the medium could be used with advantage in the isolation of Basidiomycete fungi from soil, materials frequently heavily infected with superficial moulds such as wood-pulp and bark, building boards, freshwater, pulp mill whitewaters and the air.

Fig. 1 illustrates the result of placing infected fragments of wood-pulp, taken from adjacent positions, on normal and selective malt agar plates. Complete suppression of *Trichoderma*, which was sporing freely on the pulp, has been obtained with the selective medium, and the Basidiomycete responsible for the rot-stain under examination has been successfully isolated.

P. RUSSELL

Bowaters Development and Research, Limited,
Central Research Laboratories,
Northfleet, Kent.
Jan. 6.

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Incorporation of Carbon-14 into the Complex Polysaccharides of Plants

THE carbon-14 tracer technique would appear to offer a unique opportunity for investigations of the biosynthesis and subsequent metabolism of pectins and hemicelluloses, provided that there is a measurable synthesis and turnover of these polysaccharides in plant tissues. After allowing four mature fruiting spurs, each with four to six leaves and two fruits, detached from plum trees (variety Victoria), to photosynthesize[1] in the presence of carbon-14 dioxide (from 43·5 μc. barium carbonate-^{14}C), the leaf polysaccharides and the water-soluble polysaccharides of the fruit mesocarp were isolated. Labelling of all the monosaccharide constituents was observed by hydrolysing the polysaccharides (*N* sulphuric acid; 100°; 16 hr.), separating the products on paper chromatograms and examining with a Geiger counter those areas containing the separated sugars. The specific activities of the latter were determined, after elution from the paper chromatograms, as infinitely thin films on planchets (see Table 1). The incorporation of carbon-14 into the fruit mesocarp polysaccharides may be due to photosynthesis by the fruit or by translocation from the leaves.

Table 1

Monosaccharide	Specific activity (counts/min./mgm.)	
	Leaf polysaccharides	Mesocarp polysaccharides
Galacturonic acid	882	20
Galactose	1,342	31
Glucose	3,110	—
Arabinose	334	11
Xylose	180	—
Rhamnose	184	—

The highly active glucose undoubtedly arose from leaf starch. Clearly, the complex polysaccharides are biosynthesized in the leaf and mature plum fruit tissues, thus suggesting the existence of a dynamic equilibrium between these polysaccharides and their monosaccharide constituents in a manner analogous to the animal proteins. Jermyn and Isherwood[2] have made an analytical study of the cell-wall polysaccharides of pear fruit at various stages of ripening, with the conclusion that certain of the polysaccharides were being synthesized in over-ripe fruit. The synthesis of complex polysaccharides in mature fruit tissues is contrary to the classical view.

This work forms part of the programme of the Food Investigation Organization of the Department of Scientific and Industrial Research.

L. HOUGH
J. B. PRIDHAM*

Department of Organic Chemistry,
University,
Bristol 8.

* Present address: The Institute of Paper Chemistry, Appleton, Wisconsin, U.S.A.

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Mitochondrial *Nebenkern* of the Water-boatman

DURING the past few years, in the course of an investigation of the chemical composition of the acroblasts ('Golgi apparatus') in the spermatogenesis of the water-boatman (*Notonecta glauca*), I have been impressed by the structure of the mitochondrial *Nebenkern* of this animal. The male germ-cells of *Notonecta* are very large, the spermatozoon being more than a centimetre long, and the *Nebenkern* is probably the largest single body of mitochondrial origin that occurs in any organism. Its development and subsequent history were worked out long ago by Pantel and de Sinéty[1], Poisson[2] and Voïnov[3]. It is formed by the fusion of the mitochondria present in the young spermatid.

The purpose of this communication is to direct attention to the curious resemblance between the internal structure of this *Nebenkern* as seen by the light-microscope, and that of the ordinary mitochondrion as revealed in recent years by the electron microscope. Fig. 1 represents a section of the *Nebenkern* of the young spermatid of *Notonecta*. It is seen to be traversed by flat partitions, which show at