The nuclei of all cells were similar, showing nuclear membranes, chromosomes, and prominent nucleoli. The cytoplasm contained highly developed structure which presumably reflected the incipient growth condition of the cells. Several cytoplasmic components were common to both embryos : small dense granules, endoplasmic reticulum, mitochondria, proplastids, amyloplasts, irregular bodies, plasma membranes, and plasmodesmata. The small dense granules, presumably ribonucleoprotein particles, occurred profusely, both free and in association with extensively developed endoplasmic reticulum. These particles are probably responsible for the microsomal fractions obtainable from embryos and seedlings. The mitochondria were usually relatively small (0·25–0·5μ diameter) although groups of very long (5μ) ones were occasionally found. Bodies resembling mitochondria in size and shape, but lacking cristae, were present and represent either immature mitochondria or proplastids. Reserve material occurred as starch in structurally complex amyloplasts and possibly as protein in the irregular bodies. In addition to these structures cells of the wheat embryos remote from the meristems contained prominent cytoplasmic bodies classified as 'dense' and 'thick-walled'. The dense bodies probably represent stored lipids while the significance of the thick-walled bodies, which showed a variety of forms, is unknown.

Rafflesia in Sumatra

Among the genera of plants which might well be described as wonderful, if not odd, *Rafflesia* must surely be accorded a leading place. Some thirteen species were recorded by Koorders in 1918 for the whole of the Malaysian region ; but it now appears that some of this investigator's views may require revision. W. Meijer (*Ann. Bogorienses*, **3**, 1, 33 (1958)) has now added further information on *Rafflesia arnoldi* as observed by himself and colleagues in West Sumatra. From an examination of the literature and the material preserved in the Herbarium Bogoriense, as well as from his own observations, he has concluded that the *Rafflesia* species in question is identical with the original *R. arnoldi* of Robert Brown (1822) and that it occurs in both Central and South Sumatra. Its taxonomic position is discussed, and the author points out that *R. tuan-mudae* Becc. from Borneo is very closely related to, and may even be conspecific with, *R. arnoldi* R. Br. ; and that the key given in Koorders's monograph is incorrect as to the distinction between these two plants. Some information concerning other *Rafflesia* species occurring on Sumatra is also given. Observations on the growth-rate, mortality of the buds, and the possible mode of distribution of the seeds are recorded. It is now estimated that the entire cycle from seed to seed takes approximately 4½–5 yr.

Soil Basidiomycetes

J. H. Warcup has contributed the results of an investigation on the isolation of basidiomycetes from the soil (*Trans. Brit. Myc. Soc.*, **42**, 1, 45 (1959)). Whereas extensive series of dilution and soil plates from wheat-field and pasture soils failed to reveal these fungi, they were isolated from roots, and from hyphae, rhizomorphs, and sclerotia picked out from soil. Over a three-year period, no basidiomycete fructifications were found in the wheat-field although isolations from soil and roots showed that the field had an abundant and varied population of basidiomycetes. While fructifications were obtained from the pasture, the species thus seen fruiting were different from those isolated from soil and roots, indicating that the population was more varied than the fructifications alone would suggest. Some of the basidiomycetes were induced to form fructifications in culture.

Histological Localization of Peroxidase

D. S. Van Fleet (*Canadian J. Bot.*, **37**, 3, 449 (1959)) has observed that peroxidase is detectable in all tissues but is most reactive in the basophilic cells of the histogens. Oxidation of applied phenols and aminophenols by peroxidase produces quinones and quinonediimines that are adsorbed by nucleic acids and other basophilic substances in the formative centres of primordia. Localized reactions for peroxidase occur in the axils of leaf primordia prior to bud formation and on the surface of apical meristems in a spiral pattern marking the points for the future development of leaf primordia. Peroxidase is detectable in advance of or accompanying cell division and declines after the division phase ; decline of peroxidase at the end of the division phase is related to the increase of phenols, naphthols and phenolases. Peroxidase declines in all tissues with the exception of the phloem ; a continuous peroxidase system in the phloem connects primordia with adult tissue. The hypothesis is offered that the cellular units of the phloem peroxidase constitute a continuous system between primordia and adult tissue and are functional in catalysing the reduction of hydrogen acceptors essential to cell division and the initiation of primordia.

Oxidation of Krebs Cycle Acids by Apple Tissue

M. D. Hatch, J. A. Pearson, A. Millerd and R. N. Robertson, in a study of the oxidation of Krebs cycle acids by tissue slices and cytoplasmic particles from apple fruit (*Australian J. Biol. Sci.*, **12**, 2, 167 (1959)), point out that it has hitherto been difficult to demonstrate the Krebs cycle in either cytoplasmic particles or tissue slices obtained from apple fruit. In the present investigation, evidence was obtained for the operation of the classical Krebs cycle–cytochrome oxidase respiratory system in cut tissue and mitochondria from Granny Smith apples. The respiration of cut tissue increased when either citrate, α-ketoglutarate, succinate, malate, fumarate, or pyruvate were added. Both the endogenous and acid-stimulated respiration were inhibited by malonate, cyanide, and azide. The rapid oxidation of Krebs cycle acids by cytoplasmic particles from apple flesh was also demonstrated. These particles showed cytochrome oxidase activity and contained a succinoxidase system dependent on cytochrome *c*.

Radiation in Industry

Arthur D. Little, Inc., undertook during 1958 a study of the anticipated need for high-level radiation sources and their potential uses in industry, on behalf of the CEM group of companies (Emerson Radio and Phonographic Corporation, General Airline and Film Corporation, and Revere Copper and Brass, Inc.) and the General Electric Company's Hanford Atomic Products Operation. A summarized version of the firm's report was given by S. E. Eaton and M. Michaelis at the seventh annual conference of Atomic Energy in Industry (Radiation : a Tool for Industry. Pp. i+28. Cambridge, Mass. : Arthur D. Little, Inc., 1959), held by the National Industrial Conference Board, Inc., at Cleveland, Ohio, during