

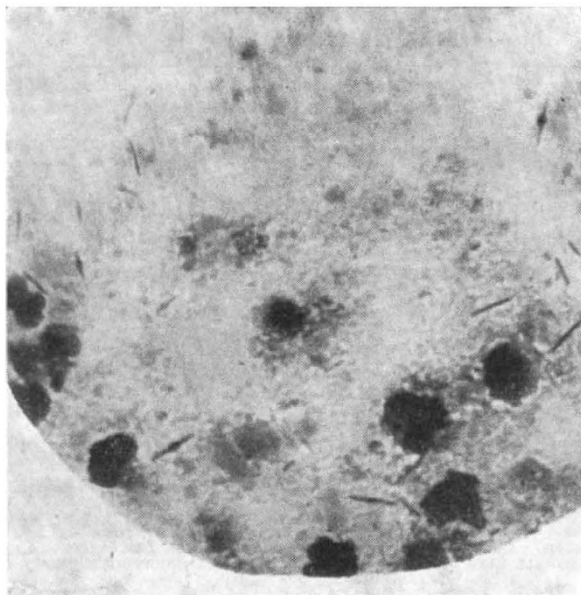
virus hypothesis is that so far it has been found impossible to cultivate this tumour in the yolk sac of fertile hen eggs, as inoculation causes a 100 per cent embryo mortality. It is hoped to carry out transmission experiments as, and when, further suitable material becomes available.

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### Morphological Changes in *Bacillus fusiformis*

In a communication in *Nature*<sup>1</sup>, Webster and Frey have reported changes in the morphology of the *Bacillus fusiformis* found in cases of ulcerative gingivitis after the application of penicillin. The organisms had developed central round or spindle-shaped swellings. In an investigation of tropical



FUSIFORM BACILLI WITH CENTRAL SWELLING; SMEARS FROM UNTREATED TROPICAL SORES.  $\times c. 900$

ulcer in Madras, I have, however, noted in smears from untreated cases similar changes in the morphology of the fusiform bacillus. The central swelling is seen both by dark-ground illumination and after staining. It would appear, therefore, that the changes in morphology are due to the influence of other factors besides any specific treatment.

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<sup>1</sup> Webster, J. F., and Frey, H., *Nature*, 158, 59 (1946).

### *Fusarium oxysporum* on the Oil Palm

In an earlier communication<sup>1</sup> I directed attention to the presence of a vascular wilt disease of the oil palm (*Elæis guineensis*) in the Belgian Congo. In so far as mycological studies could be pursued under the conditions of the investigation, the same species of *Fusarium* was isolated on a number of occasions from discoloured vascular strands. A culture submitted to Dr. S. P. Wiltshire of the Imperial Myco-

logical Institute has now been reported on by Dr. W. L. Gordon of the Dominion Laboratory of Plant Pathology, Winnipeg. The latter, who has been making a special study of this genus, has identified the culture as *Fusarium oxysporum* forma. The organism isolated from infected vascular strands of the oil palm is thus a strain or form of the comprehensive species to which the other wilt-producing *Fusaria* belong. Its pathogenicity has, of course, still to be tested.

A second culture of *Fusarium* was also submitted for identification. This was isolated from a characteristic leaf disease of the oil palm known in the Congo as patch yellow, certain genetical types of palm being apparently highly susceptible. This fungus has also been identified by Dr. Gordon as a form of *Fusarium oxysporum*. It closely resembles the first-mentioned strain, though differences are apparent on certain media. An interesting mycological and pathological situation thus awaits detailed investigation.

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Oct. 21.

<sup>1</sup> Wardlaw, C. W., *Nature*, 158, 156 (1946).

### Origin of the First European Potatoes and their Reaction to Length of Day

Mr. Hawkes and Mr. Driver<sup>1</sup> believe that the greatest single factor limiting the yield of Andean varieties under British conditions is the day-length requirement, thereby implying that they are, on the whole, good yielders in suitable conditions. This is not our experience, which is that many of them are thoroughly bad, even in short days. The point is material to our argument, and some experimental facts are called for.

Thirteen Andean varieties of *S. tuberosum* from the Empire Potato Collection were grown in winter, and compared with Up-to-Date in identical conditions. Seven (EPC 369, 501, 588, 595, 952, 1094 and 1144) gave less than one third of the yield of Up-to-Date, five of these giving less than one tenth. Only three (EPC 140, 355 and 1407) were in the same class as Up-to-Date, and No. 140 outyielded it. In another test during the fairly short days of the sub-tropical summer, results were worse. None of the seven poor varieties gave as much as one fifth of the yield of Up-to-Date, and only No. 140 was in the same class as the domestic variety. The winter tests were done out of doors at Pretoria (lat. 26° S., altitude 4,500 ft.). Because of the fairly high altitude, non-luminous heaters had to be used at night to give protection against light frosts. The day-length during winter in Pretoria varies from 10½ to 12 hours, but some lines grew a little beyond the vernal equinox into days slightly more than 12 hours long. The winters are sunny and almost cloudless, and in the amount of light Pretoria is similar to areas of slightly lower altitude where winter crops of potatoes are regularly grown. Disease was practically absent in this test. The summer tests were made in a potato-producing district near Pretoria. The altitude was 5,200 ft. and the latitude 26° S., at which the longest day is about 13½ hours long. Most lines grew for a few weeks beyond the autumnal equinox into days of 11–12 hours, and all were infected with *Alternaria solani* at the end, though, on the whole, to a smaller extent