During recent years the cultivation of the ground nut or peanut (*Arachis hypogea*, L.) in parts of South Africa has been seriously handicapped by outbreaks of a disease locally known as "rosette." The leaves of an affected plant are small, twisted and closely crowded, owing to the non-elongation of the internodes of the stem, giving the plant a bunched or rosetted appearance. These leaves are generally yellow, but in many cases show definite mottling. No seed is set by a plant diseased at an early stage of growth; and the yield is materially reduced by late infection.

We believe this rosette disease to be identical with the East African "krauselkrankheit" of Zimmermann ("Der Pflanzer," 1907 and 1913), with the Javan "krulziekte" of Rutgers (Dept. Landbouw, Nijv. en Handel in Nederl. Indie, Meded. v/h Instituut voor Plantenziekten, 1913), and with the "bunching" or "clumping" recorded from West Africa and India

All investigators of this disease failed to attribute it to any parasitic organism or in fact to any definite cause, and its nature remained little understood. Zimmermann (1907) directed attention to a similarity between this disease and tobacco mosaic; more recently, the comparison was rendered the more obvious by extensions in our knowledge of the plant virus diseases, so that pathologists generally assumed that the peanut rosette disease belonged to the virus group. Support to this view is now afforded by experimental transfer of the disease. Work carried out under our direction at Pretoria and independently at Durban has demonstrated the ability of *Aphis leguminosæ*, Theo., to transmit the disease. In these experiments aphids, removed from rosetted peanut plants, were allowed to feed upon a single mature leaf of a healthy plant, suitably protected from the feeding of any other insects. The characteristic rosette symptoms appeared afterwards in the young leaves of a large proportion of these plants. Control plants, receiving identical treatment but protected from the feeding of any insects, remained healthy.

During the course of this work, collections were made of all the suctorial insects occurring upon diseased peanuts in the field. Tests of more than two hundred individual jassids and fulgorids belonging to at least eight species afforded no single infection of the experimental plants.

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X-ray Stimulation of Phosphorescence of Fused Silica.

WITH reference to the recent correspondence in NATURE on the properties of silica, the following experiments on its phosphorescence after exposure to ultra-violet and X-rays may be of interest. In the course of experiments to test the supposed fluorescence or phosphorescence of castor oil after exposure to ultra-violet light, it was found, working independently, that a photographic plate was blackened when exposed to the oil if the vapour were allowed to come in contact with it. If, however, the vessels containing the oil were carefully sealed no blackening was obtained, even when the oil had been previously exposed to ultra-violet light. The vessels containing the oil were sealed glass jars having polished natural quartz lenses as windows, the exposure to ultra-violet radiation being carried out in these vessels.

A fused silica weight thermometer exposed to the X-rays from a "Shearer" tube for periods varying from half an hour to several hours, and then placed in contact with a photographic plate, produced considerable blackening whether containing oil or not, the fused silica being responsible for the whole of the effect, since oil exposed to X-rays, and then transferred to a quartz vessel after treatment, would not produce blackening.

The polished lenses of natural quartz previously employed could not be stimulated with X-rays or ultra-violet light to actinic phosphorescence, but experiments have shown that various specimens of fused silica can be made to phosphoresce, and, moreover, may be seen in a dark room to fluoresce a faint green under the direct action of the X-rays, the luminosity apparently ceasing with the cutting off of the radiation.

The silica continues, at room temperature, to give off radiations for periods up to three weeks or a month after the original exposure to X-rays, but the phosphorescence is removed by heating to redness for two minutes.

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The Sound of Lightning.

SINCE my letter on the above subject in NATURE of May 23, several other instances have been brought to my notice. Mr. W. H. Dines has heard the sound six times certainly, and probably more; Mr. J. S. Dines has heard it once, as has also my brother, Capt. A. L. Cave, in London, when he was indoors; two other correspondents also write to say that they have heard the sound, one of them three times. But perhaps the most remarkable case is that given in the *Marine Observer* for July (page 112); Capt. J. Burton Davies of s.s. *Hurunui* reports that from 10 P.M. on July 30, 1921, to 3.45 A.M. on July 31, when in about lat. 38 N. and long. 71 W., "a terrific electric storm was playing about the ship. . . . On three occasions the officer of the watch and myself were momentarily completely dazzled by flashes, and it appeared that immediately before the flash we heard a tearing noise as of canvas being ripped violently; in fact, after the first of these flashes I caused the quartermaster to inspect the boat covers on boat deck to see if any were torn. This noise interested me very much." The fact that the noise was heard before the flash seems to indicate that it may have been caused by a brush discharge. In any event, it proves that the noise must be real, and not an illusion like the rushing noise that some have imagined they have heard when watching a bright meteor, or the rustling sometimes attributed to the aurora.

C. J. P. CAVE.

Stoner Hill, Petersfield,
July 2.

Ether Drift and the Relativity Theory.

IN reply to Prof. Eddington's letter in NATURE for June 6 (vol. 115, p. 870), it will be enough to state that the type of ether motion alluded to in my first letter on this subject is, in spite of appearances, strictly *irrotational*. For all details and the literature of the subject the reader may be referred to my paper on "Stokes-Planck's Aether" in the *Phil. Mag.* for February 1920, p. 161. The irrotationality of Lorentz's solution to which the said motion corresponds is there sufficiently emphasised.

LUDWIK SILBERSTEIN.

Rochester, N.Y.,
June 29.