to have been realised generally that casual identifications of woodland fungi presumed to be operative are worthless; and moreover, that these fungi when they are not concerned with mycorrhizal roots have, nevertheless, an influence on the fertility of the soil, for the mycelium ramifies amongst leaves and obtains its nutriment from them.

The work that other fungi accomplish in the soil is also a matter for research; it is certain that they are as important as bacteria, but I know of no work on them here or elsewhere.

The conditions overseas in natural forests are disturbing, when one considers both exploitation and replanting. On the last visit of the British Association to Africa I was told that it was of no use my going to a certain forest if I wanted to collect fungi; I was repaid for my scepticism by the two best collecting days in twenty years' experience.

I have directed attention to the major activities of a single group of organisms, but even less is known about the more indirect ones of other cryptogams. We need still to keep cats and clover in mind.

With so many research problems crying out for attention, and the Breckland area within easy distance, it would seem that the Cambridge Forestry School might be saved from the fate which threatens it.

We have followed the German school more or less blindly and we should be unwise now merely to follow the Swedish school. Darwin first clearly pointed out the interplay between different organisms, and this principle applied with modern ecological methods of research would lead to the practical results by which the forester must, in the end, judge them.

J. RAMSBOTTOM.

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The Low Altitude Aurora of Nov. 16, 1929.

IN NATURE of May 2, p. 663, Dr. G. C. Simpson has compared the observation of an aurora in Abisko on Nov. 16, 1929, mentioned by me in NATURE of April 11, 1931, with an observation of an aurora made by him twenty-seven years ago. After a description of the last-mentioned aurora, he arrives at the following conclusion: "It is clear that these two experiences were practically identical, and there can be little doubt that what Mr. Corlin considered to be the thicker parts in the cloud covering were really breaks in the cloud through which the dark sky could be seen".

There are, however, two important differences in the observations mentioned, which show that this conclusion cannot be valid, namely—(1) during the observation at Abisko the *cloudy structure* of both the thinner and the thicker strata could be easily seen, so that there is no doubt at all that they were clouds and not "the dark sky": in addition, some few real breaks in the clouds elsewhere showed that the uncovered sky was light blue owing to the moonshine; (2) the auroral ray observed at Abisko was apparently equally intense in front of both the thinner and the thicker strata with rather sharp limits, whereas the aurora observed by Dr. Simpson showed "bright and dark patches owing to the clouds". Therefore the auroral ray at Abisko on Nov. 16, 1929, was either in front of the clouds or was far above the clouds, but had a greater intensity than the full moon.

Auroræ brighter than the full moon may possibly occur on rare occasions. An extremely bright aurora of possibly so high intensity was, for example, observed on Jan. 5, 1930, $3^h\ 30^m$ G.M.T., by the caretaker of the tourist station at Abisko, who awoke from his sleep and first thought that the tourist station was burning, but found that an aurora of extraordinary intensity was flashing all over the sky. Therefore, I have not been 'convinced' that the auroral ray on Nov. 16, 1929, was really below the clouds, but after reading later Mr. Cummings's observation of a low altitude aurora in Norwood, Canada, *on the same day* (NATURE, Jan. 17, 1931), I now find it more probable that a low altitude aurora (being thus a planetary phenomenon) really occurred on that day both at Abisko and at Norwood than that we should have by chance the same curious 'illusion' on the same day at places so far apart.

AXEL CORLIN.

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May 23.

The Inheritance by a Leafhopper of the Ability to Transmit a Plant Virus.

LEAFHOPPERS of the species *Cicadulina* (*Balclutha*) *mbila* Naude, after feeding upon a maize plant affected with the virus disease known as 'streak', will usually transfer this disease to all healthy maize plants upon which they may subsequently feed. In the course of studies of the virus transmission by this species of insect, however, I have frequently encountered individuals which failed to transfer the virus under conditions normally favourable to this process. Repeated tests of these individuals, after further periods of feeding upon diseased plants, led me to believe that they were incapable, under the experimental conditions, of acting as vectors of this virus.

I have recently studied the inheritance by this insect of the ability to transmit the streak virus by breeding successive generations from parents selected for this character. In this way I have obtained races which breed true for the character selected. Thus certain races, which may conveniently be called the 'active' races, consist of hoppers, every individual of which will invariably transfer the streak virus under suitable conditions. On the other hand, 'inactive' races have been raised in which every individual is incapable of transferring the virus. I have failed to find any morphological difference between the hoppers of these several races.

In the course of this pure line breeding it became clear that the character of 'activity' behaved in inheritance as dominant to the character of 'inactivity'. Later study of crosses between the two pure-breeding races confirmed this conclusion and, furthermore, showed that the character was linked with sex. Thus the cross, active ♂ × inactive ♀, gave an F_1 progeny of inactive ♂♂ and active ♀♀. In the F_2 generation, active and inactive hoppers appeared in approximately equal numbers in each sex. The reciprocal cross, inactive ♂ × active ♀, gave an entirely active F_1 offspring, and segregation in the F_2 generation into active and inactive ♂♂ in approximately equal numbers, and only active ♀♀.

These results conform with the well-known *Drosophila* type of sex-linked inheritance.

H. H. STOREY.

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Amani, Tanganyika Territory,
April 22.

Molecular Combination of Aliphatic Iodides.

THE binary system hexadecyl iodide (m.p. 23·3°)–octadecyl iodide (m.p. 32·9°) has a eutectic point (19·3°) and a non-congruent melting point (22·3°), showing the existence of a compound of one molecule of each iodide. This appears to be the first example of combination of alkyl halides.

J. C. SMITH.

The Dyson Perrins Laboratory,
University of Oxford,
June 9.