interfering beams of 33 mm. was set up so as to produce achromatic fringes from the light of a mercury-vapour lamp.

Two tubes each about 100 cm. long, with worked glass plates cemented on the ends, were placed parallel, one in each of the interfering beams. Each tube was evacuated, but one contained a glowing cathode and a cylindrical anode which were connected to an alternating source of potential capable of delivering about 20 milliamperes at 100,000 volts, or alternatively 200 milliamperes at 5000 volts, these two potentials corresponding to electron velocities of about 2×10^{10} cm./sec. and 4×10^{9} cm./sec. respectively.

The method of experiment was to produce wide fringes in the observing telescope, and, by means of two tapping switches, to turn on first the filament-heating current and then the applied potential. In no case was any shift or certain broadening of the fringes observed.

The main difficulty in the experiment was the frequent fracture of the necessarily small glass tube employed as the result of the great heat dissipated inside.

R. WHIDDINGTON.

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Plant-life in Cheddar Caves.

WHILE recently visiting the famous caves at Cheddar I noticed small patches of moss-like vegetation growing near the electric lamps used to illuminate the caves. The caves extend a long way into the hill-side, and, as the entrances are but small, daylight penetrates into them to a very short distance only. They are lighted by wire filament electric lamps, of which some are hung from the roof, but many are laid upon their sides in the deep natural recesses, and, in order better to illuminate the formation and bring up the beautiful colouring and folding of the stalactites, are provided with reflectors. It was close against some of these lamps that I noticed the patches of vegetation, and they looked so strange that I asked the attendant if they had been placed there as an experiment. His answer was that they had not, and that he himself had noticed them growing near the lamps.

It seems to me to be curious that this vegetation should be flourishing under such absolutely artificial conditions where there is no trace of daylight. How the spores got so far in is also an interesting point, but possibly they were introduced by dirty spades used when the workmen were digging out the latest extension of the caves.

I should be glad to know if this curious phenomenon has been observed before, and what kinds of plant-life succeed in these unnatural conditions. As one of the excursions during the forthcoming meeting of the British Association at Cardiff will be to the Cheddar Caves, perhaps a botanical visitor will identify the growth and communicate his conclusions to NATURE.

LOUGH. PENDRED.

The Diamagnetism of Hydrogen.

IN a letter to NATURE of July 22 (p. 645) Dr. Ashworth discusses the atomic diamagnetism of liquid and gaseous hydrogen on the hypothesis that diamagnetism originates from rotations or oscillations of the paramagnetic atom or molecule. He ignores, however, the case of atomic hydrogen in normally saturated hydrocarbons given in my letter of July 8 (p. 581). The atomic susceptibility of hydrogen in these compounds is *constant and equal to* $-30{\cdot}5\times10^{-7}$ *at room-temperature.* Onnes and Perrier (Proc. Amsterdam Acad., vol. xiv., p. 115, 1911) have shown that the specific susceptibility of liquid hydrogen is -27×10^{-7}, with a probable error of 10 per cent., so that there is little difference between this value for hydrogen at a temperature less than $-253°$ C. and that derived from the hydrocarbons at room-temperature. According to the kinetic hypothesis of Dr. Ashworth, the paramagnetic atom will appear diamagnetic only if its oscillations exceed 130° on either side of the position of rest, and oscillations of this nature (or complete rotations) must be common to all the hydrogen atoms in any normally saturated compound. This, I think, Dr. Ashworth will scarcely admit is plausible.

Moreover, consider the general case of crystallisation of a diamagnetic substance. The specific susceptibility of the liquid may be less than or greater than that of the crystals, but each is diamagnetic (Ishiwara, Science Reports, Tôhoku, vol. iii., p. 303, 1914; Oxley, Phil. Trans. Roy. Soc., vol. ccxiv., A, p. 109, 1914). Therefore the oscillations of the atoms which appear diamagnetic must be at least 130° on either side of the position of rest, even in crystals—a conclusion which is scarcely consistent with the view that crystalline symmetry is in part determined by the electronic configuration of the atom.

A. E. OXLEY.

The British Cotton Industry Research Association, 108 Deansgate, Manchester, July 29.

Loss of Fragrance of Musk Plants.

IT is important to ascertain whether the loss of scent which has been noticed lately in the musk plant (*Mimmulus moschatus*) in certain areas is of general occurrence throughout the country.

There is no doubt that in many cases the descendants of musk plants which used to form such fragrant inhabitants of our cottage windows have lost the power of producing the peculiar musk-like scent. An important character has dropped out of the musk plant's hereditary equipment, and it becomes a matter of interest to know to what extent and in what manner this has come about.

If any plants can be found which still retain the old scent, intercrossing between these and the scentless variety would probably give genetic results of interest.

C. J. BOND.

Fernshaw, Springfield Road, Leicester, July 26.

Meteorological Conditions of an Ice-Cap.

IN NATURE of July 29 Mr. R. M. Deeley criticises Prof. Hobbs's terminology in describing the meteorological conditions of an ice-cap as anticyclonic. He arrives at the conclusion from Prof. Hobbs's statements that low pressure exists at the centre. This is scarcely necessary.

The high pressure of an anticyclone in temperate regions is maintained by the descent of air in the centre drawn from the upper atmosphere; this compensates for the surface outflow due to the disturbing of the geocyclostrophic equilibrium by surface friction. The same conditions, *i.e.* the surface outflow and the central descent of air, exist in Prof. Hobbs's polar ice-cap anticyclone; the only difference is the physical origin.

In stating that the outflow of air over an ice-cap produced a vacuum which was filled by inflowing air from above, Prof. Hobbs was only describing in separate detail what is really a continuous process, no vacuum ever actually existing.

R. F. T. GRANGER.

Lenton Fields, Nottingham, July 30.