

aneurin. The bulletin reports effects on other plant organs of these substances of possible application in horticulture. It is impossible to include all the latest work; there is no mention here of tetrahydro-naphthylidene acetic acid, or of  $\alpha$ -naphthylacetamide, recently shown to be active substances inducing cell division and root formation, or of plants failing to respond to treatment the anatomy of which is under investigation at Kew. This bulletin forms a well-balanced review of the subject to date, and its value is increased by its practical outlook.

#### Earthquake in Bulgaria

DURING the night of Thursday-Friday, October 19-20, strong earthquake shocks accompanied by a roaring sound were reported from Orisovo near Tchirpan in south Bulgaria. Some alarm was caused among the inhabitants but no damage was reported, and thus the earthquake appears to have been of about intensity VI on the Rossi-Forel scale (oscillation of chandeliers, visible disturbance of trees and shrubs, some startled persons leave their dwellings). This area is definitely seismic, and violent local shocks were reported from the same region on April 14 and April 25, 1928. According to K. Jankov, of the Observatory at Sofia, the most active region is to the south-east of Kustendil, where 1,420 shocks occurred between the years 1749 and 1936, some of these being so severe as intensity VII on the Rossi-Forel scale (overthrow of movable objects, fall of plaster, etc., but no damage to buildings). The majority of the shocks appear to have been of shallow focus, only affecting a small area and probably being due to slipping along an active fault. The present shock may have been of a similar nature.

#### Earth Tremor near Ottawa

AN earth tremor of intensity IV on the modified Mercalli scale (rattling of dishes, windows, doors) shook Ottawa on Friday, October 20. No damage was done. Small earth tremors are known to occur in eastern Canada from Baffin Bay to the Great Lakes including Newfoundland, though the nearest active epicentres to Ottawa appear to be those of Timiskaming (Quebec), where there was a shock on November 1, 1935, and in the region of the Sanguenay River, where shocks have been recorded from as early as February 5, 1663, and continuing to the present time. Further information concerning the shock of October 20 is awaited from the Dominion Observatory at Ottawa.

#### Discovery of Comet Giacobina-Zinner

AN I.A.U. telegram from Copenhagen announces that this comet was discovered by van Biesbroeck on October 15 at 1h. 17m. U.T. Its position is given as R.A. 16h. 21m. 27.4s., N. Dec.  $1^{\circ} 18' 53''$ . It is described as diffuse with central condensation, magnitude 15. In the "Handbook of the British Astronomical Association, 1939", the elements and ephemeris of this comet are given by Mr. F. R. Cripps, who applied the perturbations of Jupiter and

Saturn to the 1933 elements. The comet is very close to the predicted position, and it is only necessary to make the corrections for perihelion passage 0.25d. later than that given in the "Handbook".

#### Rapidly Moving Spots on the Planet Jupiter

MR. B. M. PEEK, president of the British Astronomical Association and director of the Jupiter Section, has observed an outbreak of small dark spots on projections at the south edge of the North Temperate Belt of Jupiter. They appear to be rotating at such a speed that a complete rotation would take place in about 9 hours 50½ minutes. There is a remarkable similarity between these spots and those which occurred in 1880, 1891 and 1929. Astronomers in possession of telescopes with apertures of 8 inches or more should be able to see these spots.

#### A Large Sunspot

A LARGE sunspot appeared over the sun's east limb on October 19 and is now crossing to the west limb, which it will reach on November 1. The time of central meridian passage of the spot is October 26.0, its latitude  $8^{\circ}$  south and its area, corrected for foreshortening, on October 20, was 1850 millionths of the sun's hemisphere.

#### The Night Sky in November

THE moon is new on November 11 at 7.9h. and full on November 26 at 21.9h. U.T. The bright star  $\lambda$  Geminorum (magnitude 3.6) is occulted on November 30, the disappearance as seen from Greenwich taking place at 2h. 22.8m. at position angle  $102^{\circ}$  from the north point, and the reappearance at 3h. 37.8m. at  $282^{\circ}$ . Mars, Jupiter and Saturn are bright planets in the evening or night sky. In mid-November, Mars souths at about 18½h., Jupiter at 20½h. and Saturn at 22½h. Jupiter is in conjunction with the moon on November 21 at 22h. and Saturn on November 24 at 1h. Uranus is in opposition on November 13, when its distance from the earth is nearly 1,731 million miles. Neptune, near the border between the constellations of Virgo and Leo, makes a near approach (about  $20''$ ) to the eighth magnitude star BD +  $3^{\circ} 2549$ . At about 21h. in the middle of the month, the Milky Way passes from the eastern to the western horizon through the zenith of London. The most distant celestial object that can be seen with the naked eye—the Great Nebula in Andromeda—is on the meridian at an altitude of  $79^{\circ}$ . Vega is the brightest star in the north-west quadrant of the sky and Capella the brightest in the north-east. The Pleiades cluster is well above the eastern horizon, and Orion is then just rising. The Leonid meteors should be looked for about November 14-16; their radiant point, preceding  $\gamma$  Leonis, rises about 23h. The meteors of this well-known shower are characterized by swift flights and their greenish colour. Light variations in the variable star Algol ( $\beta$  Persei) may be noticed about one and a half hours before and after the following times of primary minima: November 14d. 3.1h.; 16d. 23.9h.; 19d. 20.8h. and 22d. 17.6h.