

refraction ( $n_D = 1.9765$  for sodium-light), birefringence, and dispersion are all high.

A chemical analysis made by Mr. E. D. Mountain on a quarter of a gram of carefully selected crystal fragments agrees closely with the formula  $PbHAsO_4$ . It was then found that the crystallographic data agree with those previously determined for artificial crystals of this substance. A copy of E. S. Fedorov's "Tables for Crystallo-chemical Analysis" not being available, it was not possible to identify the substance from the crystallographic data alone. Artificial crystals of lead hydrogen arsenate had been prepared and completely determined crystallographically by the late Baron A. de Schulten (a political refugee from Finland, who worked in the chemical laboratories of the Sorbonne in Paris) in 1904. He also prepared a series of other compounds isomorphous with the mineral monetite ( $CaHPO_4$ ), with strontium, barium, or lead in place of calcium, and arsenic in place of phosphorus. Of these only  $CaHPO_4$  has been hitherto known to occur in nature. For the compound  $PbHAsO_4$  occurring as natural monoclinic crystals the mineral name *schultenite* is suggested. The "lead arsenate" of commerce is the same substance. This is used as an insecticide, especially in America in sprays for fruit-trees; and being practically insoluble in water it is no doubt responsible for the retention of arsenic in apples.

A detailed account of the new mineral, so far as this can be completed from the single specimen, will be given in the December issue of the *Mineralogical Magazine*. There are no doubt other specimens of this mineral in collections amongst the rich series of crystallised material that has come from the Tsumeb mines.

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#### The Anomalous Flocculation of Clay.

IN a letter to NATURE of May 1, 1926, Dr. Joseph and Mr. Oakley allude to some experiments which have convinced them that the alleged anomalous flocculation of clay does not exist. The anomalous flocculation of clay is said by them to be the accelerating influence of hydroxyl ions on flocculation by calcium salts when compared with the retarding effect of hydroxyl ions on flocculation by sodium salts. I should like to submit, however, that the behaviour of calcium ions in alkaline medium is not regarded as anomalous by comparison with the behaviour of sodium ions in alkaline medium. Flocculation of clay by calcium salts is anomalous when considered in the light of prevalent theories, and not necessarily when compared with the behaviour of other ions. As I understand the anomalous flocculation of clay, the most that could be claimed by Dr. Joseph and Mr. Oakley is that the sodium flocculation of clay is also anomalous.

One realises, of course, that within the limits of a letter a description of experimental detail is not possible, but it is crucially important to know what precisely is meant by a "highly purified clay." The significance of the results in question is entirely dependent upon the complete removal of both adventitious and absorbed calcium in the clay. A highly purified clay suspension would ordinarily be taken to mean a suspension of clay in which there was no appreciable amount of the coarser particles, but such a clay suspension would still contain absorbed calcium, and on the addition of sodium salts that calcium would come into solution. Soils containing absorbed calcium can ordinarily be flocculated by the addition of a sufficient amount of alkali, but according to some incidental observations made on

soil suspensions in these laboratories by S. J. Saint (*Proc. 2nd Comm. Intern. Soc. of Soil Science*), when the absorbed calcium has been completely replaced by sodium, no amount of sodium hydroxide will bring about a flocculating effect.

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#### Persistent Solar Prominences.

IN NATURE for July 24, page 131, reference is made to a large prominence formation on the sun's north-western limb on July 16. Apart from the interest in this display as to grandeur, consideration is enhanced by the fact of the many repeated appearances of this particular display. My records, which cover 71 observing dates since June 1, show that the first appearance of this exceptional formation was on June 18, in the north-west quadrant, in the north-east quadrant on July 2 and 3, again in the north-west on July 16, in the north-east again on July 29 and 30, once more in the north-west on August 12, and, although reduced somewhat, once again in the north-east on August 25 and 26.

We have thus  $2\frac{1}{2}$  complete synodic revolutions of the sun, during which this formation was preserved practically to the full extent for two complete synodic rotations, the display being easily recognisable, not only by its large extent, but also by the particular form which the various constituents retained, mostly magnificent tree forms, with bright trunks spreading into an elaborate tracery of interlacing branches. On the last appearance the trunks only seemed to be left, although faint overhead festoons and filaments were still visible.

ALBERT ALFRED BUSS.

Lee-Observatory, Chorlton-cum-Hardy,  
Manchester, August 27, 1926.

#### Spraying Crops from Aeroplanes.

IN NATURE for August 14, p. 239, it is recorded that the first attempt in Great Britain to utilise the aeroplane for spraying operations took place in Lincolnshire in August 1926. It is to correct an error that the present communication is made. The first record of powder spraying by aeroplane in Britain is made in the *Fruitgrower*, June 29, 1922, and of which no reference can be found in NATURE of that year.

The experiment took place at Portobello Farm, Kingsdown, near Sevenoaks, owned by Major R. F. Bartlett, on an eighteen-acre cherry orchard badly infested by caterpillars. The material used was a proprietary dust ('Belumnite') manufactured and supplied by Messrs. W. J. Craven and Co., Evesham. The lessons learnt at this initial experiment are published in the *Fruitgrower*, July 13, 1922.

It should be placed on record that Major Bartlett was the first in Great Britain to use the aeroplane for the control of orchard pests, although the recorded facts of the efficiency of the method leave much to be desired.

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Dept. of Entomology, R.H.S. Laboratory,  
Wisley, Surrey, August 27.

#### International Code of Zoological Nomenclature.

DURING this year I have so often been asked how this Code could be obtained that I hasten, with your permission, to announce that the Washington Biological Society has just published a reprint at the price of one dollar. Prof. C. W. Stiles, secretary to the Commission, says: "I would suggest that, if your colleagues wish copies, it would expedite matters to order a number at once." The address of the Society is at the Bureau of Entomology, Washington, D.C., U.S.A.

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