

conjugated biquadratic forms with integral coefficients.—**J. Renaud**: Points of identification, in times of fog, of the great French ports on the Atlantic Ocean.—**P. Chevenard**: A self-recording differential dilatometer. Two test pieces, one of a standard chrome nickel alloy ("baros") of known coefficient of expansion, are arranged to move an optical lever, the magnification being about 300. Curves are given for a ferro-nickel (59.2 per cent. nickel), electrolytic iron, and forged nickel.—**J. Repelin** and **L. Joleaud**: Limits of the marine Aquitanian in the Provençal region.—**H. Jumelle**: The palm-trees producing vegetable horsehair of Madagascar.—**L. Bordas**: The function of some Ichneumonides as auxiliaries in forestry. Two species of *Pimplinae*—*Rhyssa* and *Ephialtes*—assist in the defence of forests against the attacks of *Sirex* and *Callidium*. The Ichneumons deposit their eggs in the larvæ of *Sirex* and other pests, and in consequence are of great service in the preservation of forest trees.—**J. Pavillard**: Some new or slightly known Protozoa of the Mediterranean plankton.

## CAPE TOWN.

**Royal Society of South Africa**, April 18.—**Dr. L. Péringuey**, president, in the chair.—**Sir Thomas Muir**: Note on the expansion of the product of two oblong arrays. The form taken by Binet and Cauchy's well-known expansion of the year 1812 is that of a sum of products of pairs of determinants; the form of the expansion now given is that of an aggregate of single determinants. The relation between the two is explained and a historical remark added.—**J. S. v. d. Lingen**: Notes on radiation of crystals. (1) Radiation patterns of the transformation of magnesium hydroxide to magnesium oxide. The patterns show that the reflecting planes of the crystal are disturbed when water is driven off. The "spots" become drawn out into radial lines, and these radial lines reflect the intensity of the X-ray spectrum. (2) Diamond tests by radiation patterns. The following stones were examined:—"Macle," "spotted" stone, "spotted rejection" stone, and an "inferior brown block" with a spot in it. The patterns show that a "spot" in a stone causes a discontinuity in the intensity of individual spots of the patterns, and that a fracture of the lattice causes a discontinuity of the spots so that they now represent irregular markings on the plate. An ideal diamond's pattern shows a uniform intensity in all the spots. (3) Bultfontein apophyllite, (i) ideal, and (ii) showing a cleavage crack along a cleavage plane. The flaw causes the spots of the "flawed" crystal to present a nebular appearance, whereas the ideal stone shows a uniform distribution of intensity in the elliptic spots. This represents a case of discontinuity in the lattice normal to the incident rays. (4) Serpentine, malachite, and pseudomorph quartz. Serpentine shows a regular "radial line" pattern symmetrical to a line parallel to the threads of the crystal. This indicates that serpentine is not triclinic unless every specimen examined was a "twin." Malachite shows three "lines" parallel to the threads and some minor radial lines normal to the former deviating slightly from the normal. Crocidolite: A long exposure shows that it is microcrystalline and that the elementary units have a tendency to favour a direction parallel to the threads. (5) A square-plate of iodine showed, after an exposure of about an hour, a diffraction phenomenon similar to that described by Prof. Laub, of Buenos Aires. In this case the plate shows diagonal lines of zero intensity.—**S. Schonland**: A summary of the distribution of the genera of South African flowering plants (with special reference to the flora of the Uitenhage and Port Elizabeth divisions). This is to a large extent based on published data, checked and enlarged, however, by

the author's personal knowledge. It was compiled in connection with a study of the flora of Uitenhage and Port Elizabeth, but it is hoped that it may be welcome to other botanists who desire to have readily available a summary showing the general trend of distribution of South African genera.—**Prof. G. Elliot Smith**: Note upon the endocranial cast obtained from the ancient calvaria found at Boskop, Transvaal (see p. 353).

## BOOKS RECEIVED.

*L'Œuf et les Facteurs de l'Ontogénèse*. By Prof. A. Bracher. Pp. 349+xii. (Paris: O. Doin et Fils.) 6 francs.

*The Organisation of Thought: Educational and Scientific*. By Prof. A. N. Whitehead. Pp. vii+228. (London: Williams and Norgate.) 6s. net.

## DIARY OF SOCIETIES.

THURSDAY, JUNE 28.

ROYAL SOCIETY, at 4.30.—Contribution to the Study of the Magnetic Properties of Manganese and of some Special Manganese Steels: Sir Robert Hadfield, Ch. Chêneveau, and Ch. Géneau.—Note on the Specific Heat of Water: W. R. Bousfield.—The Specific Heat of Aqueous Solutions, with Special Reference to Sodium and Potassium Chlorides: W. R. Bousfield and C. Elspeth Bousfield.—The Rankine Trochoidal Wave: Sir George Greenhill.—The Tribo-electric Series: Dr. P. E. Shaw.—And other Papers.

MONDAY, JULY 2.

ARISTOTELIAN SOCIETY, at 8.—Relation and Coherence: Miss L. S. Stebbing.

## CONTENTS.

	PAGE
<b>The Electrification of Our Railways.</b> By Dr. A. Russell . . . . .	341
<b>Cotton Cultivation in the United States</b> . . . . .	342
<b>General Chemistry.</b> By T. M. L. . . . .	343
<b>Our Bookshelf</b> . . . . .	343
<b>Letters to the Editor:—</b>	
Chinese and Persian Giraffe Paintings. ( <i>Illustrated</i> ). — <b>Dr. C. R. Eastman</b> . . . . .	344
The Nature of Renal Activity.— <b>Prof. W. M. Bayliss, F.R.S.</b> ; <b>The Reviewer</b> . . . . .	344
The Origin of Flint.— <b>Cecil Carus-Wilson</b> ; <b>Dr. F. J. Allen</b> . . . . .	345
A Note on Chaffinches and Cuckoos.— <b>Honor M. M. Perrycoste</b> . . . . .	345
Jupiter's Satellites and the Velocity of Light.— <b>Prof. A. W. Warrington</b> . . . . .	345
Arcs of Halos.— <b>Walter W. Bryant</b> . . . . .	345
<b>Horse-breeding and Horse-racing.</b> By <b>Prof. J. C. Ewart, F.R.S.</b> . . . . .	346
<b>The Destruction of House-sparrows.</b> By <b>Dr. Walter E. Collinge</b> . . . . .	347
<b>The Publication of the "Kew Bulletin"</b> . . . . .	348
<b>Prof. Kr. Birkeland.</b> By <b>Dr. C. Chree, F.R.S.</b> . . . . .	349
<b>Notes</b> . . . . .	349
<b>Our Astronomical Column:—</b>	
Orbit of Comet 1915a (Mellish) . . . . .	353
The Solar Physics Observatory . . . . .	354
The Spectra of Nebulae . . . . .	354
<b>Annual Congress of the South-eastern Union of Scientific Societies</b> . . . . .	354
<b>The Future of the X-ray Industry</b> . . . . .	355
<b>The Argentine Society of Natural Sciences</b> . . . . .	355
<b>Educational Reconstruction</b> . . . . .	356
<b>University and Educational Intelligence</b> . . . . .	357
<b>Societies and Academies</b> . . . . .	358
<b>Books Received</b> . . . . .	360
<b>Diary of Societies</b> . . . . .	360

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