

processes. In this connection note has to be made of the distinct line of demarcation between colloidal and non-colloidal clay, the former state being inimical to filtration processes generally. After studying the various phenomena of the effect of weathering, adsorption and absorption of metals and of water during dressing and milling operations, their influence on specific gravity and the effect of heat on clay, the author deals with the viscosity of clay, its influence, and the use and value of electrolytes. He adduces from the facts premised in his investigation the highly absorptive properties of colloidal as compared with non-colloidal clay, and the powers which clays possess of retaining liquids and dissolved salts, and he draws the following conclusions:—(a) Adsorption of gold solution may occur during treatment, but the main loss is probably due to absorption. This conclusion is strengthened by the fact that (1) non-colloidal clay is only slightly absorbent; (2) colloidal clay is highly absorbent; and (3) burnt clay (*i.e.* after the colloidal envelope has been destroyed) is practically non-absorbent; (b) the weathering of clay slime should be avoided except in the instance where the decomposition of refractory mineral is desired; (c) clay slime should be allowed an extended time of contact with wash solutions. This precaution is, of course, unnecessary if the ore has been roasted before cyanide treatment.—**E. Maxwell-Lefroy**: Wolframite mining in the Tavoy District, Lower Burma. This is an informing paper dealing with the chief mineral product of the district. Nearly one-fifth of the total world's output of wolfram comes from Tavoy, so that particulars of the occurrence and methods adopted for mining and marketing the mineral should be of interest.

## PARIS.

**Academy of Sciences**, December 6.—**M. Ed. Perrier** in the chair.—**Ch. Frémont**: A clock escapement of the thirteenth century. The description is taken from a manuscript dating between 1240 to 1251, by a French architect, Villard de Honnecourt. It is more than a century earlier than the clock made by Henri de Vic for Charles V., about 1370.—**G. Moch**: The double detonation of projectiles possessing a high initial velocity. Remarks on a communication on the same subject by M. Agnus, with references to earlier discussions of the phenomenon.—**P. Le Roland and A. Carpentier**: An induction apparatus for detecting metallic fragments.—**Louis Maltes**: Electrical influence in a cell with an insulating wall, and with liquid nucleus.—**L. Wertenstein**: The charge of the radioactive recoil.—**L. Tschugaeff and W. Khlopine**: The series of hydroxo-platinic salts. The new series is prepared by the action of ozone on Peyrone's chloride  $(\text{NH}_3)_2\text{PtCl}_2$ , in presence of ammonium carbonate. The general formula is  $[\text{Pt}_5\text{NH}_3(\text{OH})\text{X}^3]$ , where X is Cl,  $(\text{NO}_2)$ , etc. These substances have the property of forming insoluble carbonates and sulphates, and resemble barium salts in this respect.—**M. Fleury**: The subterranean hydrology of Alviella.—**A. Guépin**: Results of a shell wound of the brain. Surgical ablation or destruction of a third of the left cerebral hemisphere and subsequent recovery with appreciable nervous troubles resulting.—**R. Desplats and R. Pautot**: A radioscopic method for the localisation of projectiles.—**Louis Roule**: New researches concerning the migration of the salmon.—**M. Caullery and F. Mesnil**: The structure of a parasitic Copepod, *Xenocoeloma brumbii*, and its relations with its host, *Polycirrus arenivorus*.

## BOOKS RECEIVED.

Elementos de Fisica Descritiva para a 4<sup>a</sup> E. 5<sup>a</sup> Classes. By Profs. F. J. S. Gomes and A. R. Machado. 5<sup>a</sup> Edição, Revista by Prof. A. R. Machado. Pp. 528. (Braga: Livraria Escolar De Cruz and Ca.)

NO. 2408, VOL. 96]

Rainfall of India. Twenty-fourth Year, 1914. (Calcutta: Superintendent Government Printing, India.)  
Transactions of the Royal Society of Edinburgh. Vol. I. Part ii. Session 1913-14. Pp. 253-516+plates. (Edinburgh: R. Grant and Son; London: Williams and Norgate.) 27s.

The Romanes Lecture, 1915: Science and the Great War. By Prof. E. B. Poulton. Pp. 47. (Oxford: At the Clarendon Press.) 2s. net.

Live Stock Journal Almanac, 1916. Pp. 188. (London: Vinton and Co., Ltd.) 1s.

City and Guilds of London Institute. Department of Technology, Exhibition Road, S.W. Report on the Work of the Department for the Session 1914-15. Pp. x+451. (London: John Murray.)

Fourth Report on the Cost of Food in the Production of Milk in the Counties of Kent and Surrey. By G. H. Garrad. Pp. 95. (Wye: S.E. Agricultural College.) 2s.

New Zealand. Department of Mines. Geological Survey Branch. Bulletin No. 17. (New Series.) The Geology and Mineral Resources of the Buller-Mokihinui Subdivision, Westpart Division. By P. G. Morgan and J. A. Bartrum. Pp. viii+210. (Wellington: J. Mackay.)

Canada. Department of Mines. Geological Survey. Memoir 34: The Devonian of South-western Ontario. By C. R. Stauffer. Pp. v+341. (Ottawa: Government Printing Bureau.)

Metamorphic Geology. By C. K. Leith and W. J. Mead. Pp. xxiii+337. (New York: H. Holt and Co.) 2.50 dollars.

## CONTENTS.

	PAGE
The "Wheat Problem" and Synthetic Nitrates . . . . .	447
The Fauna and Flora of Central America . . . . .	448
Fossil Man. By A. S. W. . . . .	450
The War and the Future . . . . .	451
Our Bookshelf . . . . .	452
Letters to the Editor:—	
The Organisation of Science.—"F.R.S." . . . . .	453
Notes on Stellar Classification. ( <i>With Diagrams.</i> )	
By Sir Norman Lockyer, K.C.B., F.R.S. . . . .	454
A Pliocene Flotsam. ( <i>Illustrated.</i> ) . . . . .	455
National Economy in Fuel. By Prof. J. S. S. Brame	457
Agricultural Education and Research . . . . .	458
Sir Henry Roscoe, F.R.S. By Sir T. E. Thorpe,	
C.B., F.R.S. . . . .	459
Notes . . . . .	461
Our Astronomical Column:—	
o Ceti . . . . .	466
Comet 1915e (Taylor) . . . . .	466
Geminid Meteor Shower . . . . .	466
Notes on Variable Stars . . . . .	466
A Tungsten Arc Lamp. ( <i>Illustrated.</i> ) . . . . .	467
The Working and Maintenance of Steam Boilers	468
Behaviour of Plants in Response to the Light.	
( <i>Illustrated.</i> ) By Dr. Harold Wager, F.R.S. . . . .	468
University and Educational Intelligence . . . . .	472
Societies and Academies . . . . .	473
Books Received . . . . .	474

## Editorial and Publishing Offices:

MACMILLAN & CO., LTD.,  
ST. MARTIN'S STREET, LONDON, W.C.

Advertisements and business letters to be addressed to the  
Publishers

## Editorial Communications to the Editor.

Telegraphic Address: PHUSIS, LONDON.  
Telephone Number: GERRARD 8830.