

	pH	C/N	Depth	Place	Investigators		
Red Loams I	6.4	18.30	0-6 in.	Chaubatia (Kumaun Hills), India	Mukherji and Das		
	6.8	14.20	0-6 in.				
Brown Forest Soils II	6.2	18.20	0-8 in.				
	6.3	12.70	0-1 ft.				
Podsol III	6.5	18.90	0-5 in.				
	6.8	16.10	0-5 in.				
Wiesenboden IV	6.2	19.04	0-1 ft.				
	6.8	16.60	0-7 in.				
Podsol V	6.0	16.90	0-1 ft.			Shropshire, England	Davies and Owen <sup>4</sup>
	6.4	16.0	0-6 in.				
Podsol VI	6.7	15.84	0-9 in.	Northern New Guinea	Hardon <sup>6</sup>		
	3.70	29.24	6-9 in.				
Brown Earth VII	3.13	13.36	9-19 in.	England	Muir <sup>7</sup>		
	3.73	23.48	19-23 in.				
Brown Plains Solod	3.0	129.0	0-10 cm.	Saskatchewan, N. America			
	4.3	51.69	20-30 cm.				
	5.26	24.60	0-3 in.				
	5.35	19.40	3½-7½ in.				
	6.17	23.96	7½-9 in.				
	6.20	29.00					
	7.07	21.90					

due to the influence of light and high temperature, the organic matter, which acts as a buffer, is readily oxidized from the soils, which have thus the tendency to be alkaline. With such soils, before the alkalinity is reached, the C/N ratio has a tendency to increase as observed by ourselves as well as McLean. But as alkalinity develops, the cellulose and the carbohydrates are oxidized more readily than the protein of the soil and the C/N ratio falls off. Hence the temperature effect is nullified by the alkalinity influence.

On the other hand, in soils in temperate and sub-tropical countries the organic matter added to the soil or present therein is not oxidized readily and hence such soils have a tendency to be on the acidic side, as illustrated above. But before it becomes acidic the C/N ratio may be in the neighbourhood of 10.0, as is frequently observed. But when the soil becomes acidic, the C/N ratio tends to increase. This is because in protein metabolism, ammonia is usually the first product of such oxidations and hence acidity may help the removal of one of the products of protein oxidation, namely, ammonia, and thus may help protein metabolism. Hence, in acid soils, protein metabolism may be faster than the oxidation of cellulose or carbohydrates, resulting in the increase of C/N ratio of such soils. This is why Jenny has obtained high C/N ratios in soils from cold countries.

The above conclusions are supported by the observations of Jensen<sup>8</sup> showing that 20-25 parts of carbon are oxidized in the nitrification of one part of nitrogen nitrified in acid soils, and by the facts that the acid soils in the paddy fields of Siam have 11.4 as the C/N ratio and the C/N ratio of virgin or prairie soils falls off from 13.6 to 10.5 after cultivation as observed in the United States and that the C/N ratio of Mauritius soils increases with increasing rainfall and soil acidity as recorded by Craig and Halais<sup>9</sup>.

<sup>1</sup> Dhar and Mukherji, *J. Indian Chem. Soc.*, **11**, 727 (1934).

<sup>2</sup> McLean, *J. Agric. Sci.*, **20**, 340 (1930).

<sup>3</sup> Jenny, *Soil Sci.*, **27**, 168 (1929).

<sup>4</sup> Mukherji and Das, *Indian J. Agric. Sci.*, **10**, 990 (1940).

<sup>5</sup> Davies and Owen, *Emp. J. Exp. Agric.*, **2**, 193 (1934).

<sup>6</sup> Hardon, *Natuuk. Tijd.*, p. 25 (1934).

<sup>7</sup> Muir, *Forestry*, **8**, 25 (1934).

<sup>8</sup> Jensen, *J. Agric. Sci.*, **19**, 71 (1929).

<sup>9</sup> Craig and Halais, *Emp. J. Exp. Agric.*, **2**, 349 (1934).

## FORTHCOMING EVENTS

### Monday, January 19

ROYAL SOCIETY OF ARTS (at John Adam Street, Adelphi, London, W.C.2), at 1.45 p.m.—Dr. B. A. Keen, F.R.S.: "Soil Physics, Theory and Practice" (Cantor Lectures, 1).

ROYAL GEOGRAPHICAL SOCIETY (at Kensington Gore, London, S.W.7), at 3 p.m.—Dr. Kenneth Sandford: "Western Frontiers of Libya".

### Tuesday, January 20

ROYAL ANTHROPOLOGICAL INSTITUTE (at 21 Bedford Square, London, W.C.1), at 1.30 p.m.—Prof. Ellis H. Minns: "Archæology in the U.S.S.R."

ROYAL SOCIETY OF ARTS (Dominions and Colonies Section) (at John Adam Street, Adelphi, London, W.C.2), at 1.45 p.m.—Rev. H. M. Grace: "Educational Problems of East and West Africa".

### Wednesday, January 21

ROYAL SOCIETY OF ARTS (at John Adam Street, Adelphi, London, W.C.2), at 1.45 p.m.—Mr. James Kewley: "Evolution in the Petroleum Industry".

### Thursday, January 22

TOWN AND COUNTRY PLANNING ASSOCIATION (in the Dome Lounge, Dickens and Jones, 224 Regent Street, London, W.1), at 1.20 p.m.—Prof. Patrick Abercrombie: "Re-Development of City Centres".

ROYAL INSTITUTION (at 21 Albemarle Street, London, W.1), at 2.30 p.m.—Prof. C. E. Inglis, F.R.S.: "Aesthetics of Bridge Design".

### Friday, January 23

NORTH-EAST COAST INSTITUTION OF ENGINEERS AND SHIPBUILDERS (at the Mining Institute, Newcastle-upon-Tyne), at 6 p.m.—Mr. Brian Reed: "The Future of the Railway Oil Engine".

### Saturday, January 24

BRITISH RHEOLOGISTS' CLUB (in the Department of Physics, The University, Birmingham), at 1.15 p.m.—Discussion on "Classifications of Rheological Properties".

## APPOINTMENTS VACANT

APPLICATIONS are invited for the following appointments on or before the dates mentioned:

LECTURER IN PHARMACEUTICAL SUBJECTS at the Plymouth and Devonport Technical College—The Education Office, Cobourg Street, Plymouth (January 28).

HEADMASTER of the Junior Technical School of the Royal Technical College, Salford—The Director of Education, Education Offices, Salford 3 (January 31).

## REPORTS and other PUBLICATIONS

(not included in the monthly Books Supplement)

### Great Britain and Ireland

British Psychological Society, Shelter and Evacuation Problems: being Papers read at a Meeting of the Society held on July 26th, 1941, and a Short Summary of the ensuing Discussion. Pp. 32. (London: British Psychological Society.) [1612]

International Committee for Bird Preservation, British Section and Polish Section. Annual Report for 1939 and 1940. Pp. 32. (London: International Committee for Bird Preservation.) [1612]

National Baby Welfare Council, including National Baby Week Council, 1941. Annual Report, 1939-40. Pp. 12. (London: National Baby Welfare Council.) [2412]

### Other Countries

Dominion Observatory Bulletin No. R.26: Report for the Year ended 31st December 1940. Pp. 4. (Wellington: Government Printer.) [2412]

Government of Madras. Administration Report of the Government Museum and Connemarra Public Library for the Year 1940-41. Pp. 32. (Madras: Government Press.) 8 annas. [2412]

Indian Forest Records (New Series). Botany, Vol. 2, No. 3: *Hopea shingkong* (Dunn) Bor. By Dr. N. L. Bor. Pp. ii+227-230+1 plate. 6 annas; 7d. Botany, Vol. 2, No. 4: Some New Indian Flowering Plants: *Gleditsia assamica* Bor, *Garnotia puchiparensis* Bor, and *Strobilanthes andamanensis* Bor. By Dr. N. L. Bor. Pp. iii+231-240+3 plates. 14 annas; 1s. 3d. (Delhi: Manager of Publications.) [2412]

Annual Report on Forest Administration in Malaya, including Brunel, for the Year 1940. Pp. ii+22. (Kuala Lumpur: Government Press.) 1 dollar; 2s. 4d. [2412]

Department of Agriculture: Straits Settlements and Federated Malay States. Economic Series, No. 12: Malayan Agricultural Statistics, 1940. By D. H. Grist. Pp. xii+106 Tables. (Kuala Lumpur: Department of Agriculture.) 1 dollar. [2412]

Report on Agriculture in Malaya for the Year 1940. By W. N. C. Belgrave. Pp. 14. (Kuala Lumpur: Government Press.) 1 dollar; 2s. 4d. [2412]