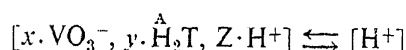


## SCIENCE NOTES AND NEWS

**Studies on the Photo-Chemical Activity of Mixtures of Vanadic Acid and Tartaric Acid.**—The study of the relationship between pH and (1) optical rotation, (2) light absorption and (3) dark reaction, with mixtures of vanadic acid and *d*- or *l*-tartaric acid at pH < 4.0 has shown the existence of negatively charged colloidal micelles of poly-vanadic acid-tartaric acid. These micelles exist in equilibrium with the hydrogen ions in the solution:



+  $[x \cdot \text{VO}_3^-, y \cdot \overset{\text{B}}{\text{H}_2\text{T}}, (z-1) \text{H}^+]$  where T=Tartrate ion.

The optical rotation and light absorption are due to the micelle B, whereas the micelle A is responsible for the dark reaction. The velocity of the oxidation of racemic-tartaric acid by vanadic acid has a higher value than that for *d*-, *l*- or *dl*-acids. This important observation lends support to the view of Cotton that a distinction must be made between the solution of a racemate and a simple mixture which is inactive by external compensation.

The photo-reduction of mixtures of vanadic acid and tartaric acid has been studied in the visible and ultraviolet regions at pH > 4.0 where equimolecular complex ions of the type  $(\text{VO} \cdot \cdot \text{HT}^-)$  appear to exist in solution. Einstein's law of photo-chemical equivalence holds good and a mechanism has been postulated for the photo-process.

The investigation of the influence of *d*- and *l*- circularly polarised light on some photo-chemical reactions involving circularly dichroic systems has shown that, where the anisotropy factor *g* is positive, the velocity of the reaction in *l*-light is greater than that in *d*-light; the reverse is the case when *g* is negative. This is observed in the photo-oxidation in *d*- and *l*-light of *d*- and *l*-tartaric acid by persulphate, using as catalyst circularly dichroic colloidal systems containing poly-vanadous acid. The above reaction with racemic acid results in the production of optical activity. This is an approach towards a complete 'asymmetric synthesis', resolution being effected purely by the agency of light.

Vanadic acid sol. exhibits circular dichroism in the visible region on exposure to circularly polarised light. The photo-reduction of the dichroic sol. by tartaric acid gives differences in reaction velocity with *d*- and *l*-light. It has also been found that even when the vanadic acid-tartaric acid mixture is not initially dichroic, exposure to *d*- and *l*-light results in induced dichroism in the mixture and also in differences in the velocity of the reaction. Circular dichroism is induced in reduced vanadic acid sol. also on exposure to *d*- and *l*-light independent of the nature of the reductant used for the reduction of the sol.

It appears that in the case of vanadic acid sol. as well as of reduced sol., circularly polarised

light exerts a directive influence during the process of formation of micro-crystalline sol. particles and causes a transition from the isotropic to the anisotropic lattice structure. This anisotropy manifests itself as circular dichroism and as a differential velocity effect in photo-chemical reactions taking place in circularly polarised light.

T. L. R.

**Blood Groups in India.**—Discussing the blood group data of twelve aboriginal tribes of India Eileen W. F. Macfarlane and S. S. Sarkar (*American Journal of Physical Anthropology*, 1941, 38, 4) consider that serologically the aboriginal tribes should be regarded as having two broad divisions, "one having the physical characters of the Paniyans or Maler with a low content of B and the other having the physical characters of the Oraons having a low content of A and more B". The Paniyans, Kanikkars and Chenchus of S. India have close relationship in blood groups to the Maler of Bihar, all the four being Dravidian-speaking tribes. Though the Malers and Oraons are neighbours, their blood groups are quite dissimilar. The Bhils and Korkus of Central Provinces have like the Oraons a high percentage of B. "There is in general an increase in the frequencies of genes A and B from South Northward, and in groups B and AB from East to West across Central India". The authors suggest that the Mundari-speaking peoples possibly entered India later.

**Nutritional Experiments with Chickens.**—As a result of a series of experiments for the investigation of growth-promoting supplements to the basal diet of chicks consisting of locally available cereals, green food and calcium in the form of crushed limestone, Macdonald (*Ind. J. Vet. Sci. & Animal Husbandry*, 1941, 11) has shown that separated milk during the first 6 weeks and separated milk and water from 6 weeks onwards as supplement are essential to ensure proper growth, health and efficiency of the chicks. Where milk is not available or is too costly, soya bean meal and silt with cereals are recommended as the next best.

S. D. A.

**Goat Spleen Tissue Vaccine as an Immunizing Agent against Rinderpest.**—By controlled experiments and by field tests on a large scale, Nair and Krishnamurti (*Ind. J. Vet. Sci. & Animal Husbandry*, 1941, 11) have confirmed that Rinderpest goat spleen tissue vaccine is potent only for four days at room temperature and that, if used within this period, it confers satisfactory immunity. But the duration of the immunity so conferred is not worked out by the authors yet. They have also confirmed the earlier findings that the reaction set up by the vaccine is often very severe in susceptible cattle and in buffaloes which are more susceptible to rinderpest than the local cattle and they

conclude that this product is unsafe for use in the field in the Madras Presidency.

In Mysore, Rinderpest goat blood virus is used, as it does not involve unnecessary animal sacrifice and as the duration of immunity conferred by it has been worked out by controlled experiments both in Mysore and elsewhere. This vaccine is used alone on indigenous cattle but with varying doses of serum in the case of buffaloes, foreign and cross-bred cattle, pregnant and debilitated animals. S. D. A.

**The Geology of Ceylon.**—The recent issue of *Spolia Zeylanica* (Vol. 23, Pt. 1)—the Journal of the Colombo Museum, edited by its Director, Mr. P. E. P. Deraniyagala,—contains a number of papers by Mr. D. N. Wadia, Government Mineralogist, dealing with some aspects of the Geology of Ceylon. As is well known, this island was till very recently part of the South Indian Peninsula and therefore shares with it many common features in its geological history such as those relating to the nature of the rocks, geological structure, and plan of architecture. Like Peninsular India Ceylon is mostly composed of extremely ancient crystalline and metamorphic rocks which in the history of the earth constitute the very foundation on which the later fossiliferous sediments were laid down elsewhere. The solitary occurrence of an Upper Gondwana bed near Tabbowa is of special interest in indicating the fact that Ceylon was also part of the great Gondwana continent; and the deformations which the Tabbowa series have undergone enable us to date the most important event in the geological history of Ceylon—the final upwarp of the central *massif*—and fixes it as post-Jurassic. During the enormously long period of time which has elapsed since the ancient Archæan rocks of Ceylon were deposited, they have been subjected to a continuous process of erosion and disintegration resulting in consequences of direct economic benefit to Ceylon; for it has liberated in a concentrated form many valuable economic minerals previously locked up in a vast bulk of the parent barren rock. Thus are to be accounted the famous Ratnapura gem fields, the Pulmoddai and Batticalca ilmenite beaches, the Induruwa monazite sands, etc.

“The Geology of Colombo and its Environs” forms the subject of another paper by Mr. Wadia in which a detailed account of the geology of this part of the country is given, showing that here we have “an epitome of the geology of the whole island of Ceylon”. The Archæan rocks of the area—mostly gneisses—described under the name ‘Vijaya Series’ constitute the main rock formation, overlying which locally we have a few recent and sub-recent deposits here and there such as laterite, river alluvia, etc. The deposits of graphite for which Ceylon is so famous, are associated with rocks which have been provisionally designated as equivalent to the Khondalite Series of India.

In another short paper by Mr. Wadia, special attention has been drawn to the ring of waterfalls in Central Ceylon and its bearing on the geological structure and earth movements. In the words of the author, “the existence of precipitous falls disposed in a crescent or ring form suggests that the central highland *massif* of

Ceylon, from which the majority of the rivers of the country radiate out fanwise, has received a considerable uplift relatively to the country surrounding it”.

The other papers published in the Journal are:—(i) On a Fossil Bamboo Stem and Some Associated Plant Remains from the Gem Deposits of Ratnapura Dt., Ceylon—by Mr. G. S. Puri, of the Botany Department, University of Lucknow, and (ii) On Some Earthworms from Ceylon—by Mr. G. E. Gates, of the Judson College, Rangoon.

Messrs. A. H. Patel and G. Narasimhamurthy write:—“Of the many problems that seriously engage the attention of the Public Health worker in India, the one concerning the place of *Hydrogenated Vegetable Fat* in the National Diet is very important. In the West ‘Margarine’ is the most common fat food consumed to a great extent and it contains about 10 per cent. of butter fat, besides the hardened vegetable and animal fats. The case is different in India. Ghee is commonly served as such at meals and the untreated vegetable fats are used for culinary purposes. Hardened vegetable fats are an innovation to this country. The sentiment for ghee is so strong that propaganda was carried out that the Vegetable Product is indigestible and that it passes off from the human system as a ballast. (N. N. Godbole, *U. P. Anti-Ghee-Adulteration Conference*, Aligarh, 1941.)

Physiological work relating to the digestibility of this product in India is very meagre and the existing evidence is not found sufficient to condemn the product outright. The notion that ghee supplies vitamins A and D to the body, besides being very digestible is not quite true, because in the way it is processed and marketed, most of the vitamins are liable to get destroyed. Its digestibility compared to the other vegetable fats is not too high to justify the high price paid for it.

May I request your readers to throw more light on the subject for the benefit of all concerned, through the columns of your esteemed Journal.”

**Cement as a Fire Extinguisher.**—Dr. Roy Cross writes in a recent number of *Science* (1942, 95, 275), that “a good deal of caution must be used in the application of pitch to extinguish fire, even though it originates from a magnesium incendiary bomb. It has been the experience of the writer with a great variety of fires in oil, metals and other materials, that there is nothing so satisfactory and so fool-proof as portland cement as it is placed on the market. In many cases in the writer’s experience it has been highly successful in extinguishing fires where water, carbon tetrachloride, foam and similar substances have been unsuccessful. The very common material so easily available and so safe to use should be placed at points where there is danger from fires either from incendiary bombs or from normal causes.

“In our own laboratory, we provide such material easily available in kegs and find it far more successful than the usual fire extinguishers. Furthermore, it gives off no injurious gases and is in itself not combustible, as in the case of pitch.”

**The Differential Resistance of Two Races of Red Scale (Coccidae-Hemiptera-Insecta) to HCN.**—Interesting observations on the reactions, to HCN, of the two physiological races of *Aonidiella aurantii* Mask—the one resistant and the other non-resistant to it—were made using examples of two pure stains from California (Hardman, N. F., and Craig, R., *Science*, 1941, 94).

Final instar females of both the resistant and non-resistant races were removed from their hosts before fertilisation; they were confined in suitable glass vials and observed closely under the microscope. Several dilutions of HCN were let into the vials and the spiracles of the scale insects were carefully watched. In structure, the spiracles of the two races are similar, the opening and closure of the organs being simultaneous with every pulsation of the tracheal trunk, which happens about 60 times every minute.

The spiracles of the resistant race remained closed for at least 30 minutes, in the presence of HCN, and the scales themselves survived a lethal concentration for at least that period. In the non-resistant race, the spiracles opened only a minute after HCN reached them, and death followed in a short time when the concentration of HCN was lethal. It is concluded that the relative ability of the two races to keep their spiracles closed when in contact with HCN, explains the difference in the resistance of the two races to the gas.

**Control of Damping-off in Seed Beds.**—*Pythium de Baryanum* causes damping-off seedlings and particularly causes severe loss in tobacco nurseries. The affected seedlings fall prostrate on the ground, and the collar region of the seedling appears to be pinched off, beginning to rot in due course. Since the infection is soil-borne, powerful fungicides cannot be applied without injurious effects to the roots. The usual nursery practice is to sterilize the surface of the soil by incineration, which is done by burning dry twigs on the seed bed. 10 per cent. formalin water is also made use of in controlling damping-off with good success. The seed beds after treatment with 10 per cent. formalin water are covered with gunny bags to conserve the effect of formalin. After this treatment the soil is raked up to enable the complete evaporation of formalin which is poisonous to the plant. The whole operation requires 7 to 8 days.

Recently satisfactory control of damping-off in seed beds of lettuce, beet, cabbage and tomato plants has been reported by Doran (*Science*, lxxxlv) by the application of acetic acid in the form of vinegar. Commercial cider vinegar is mixed up with powdered charcoal or moist sand up to 23 per cent. The seed beds dusted with this disinfectant is reported to be free from damping-off to a very great extent.

M. J. T.

**Hot-Tinning of Mild Steels.**—Difficulties are frequently encountered in hot-tinning of certain mild steel articles and components. The Tin Research Institute Publication No. 107, by W. E. Hoare and H. Plummer describes how these

difficulties may be overcome by removing the contaminated surface by mechanical treatment, deep-etching and anode pickling, or by controlled heat-treatment. "Difficult" tinning quality is ascribed to the formation of adherent lacquer-like films arising from the rolling and drawing lubricants and coolants being partially decomposed in contact with the metal surface by heat and possibly by oxidation and pressure and may be avoided by adequate degreasing prior to the annealing operations.

**Calcium Gluconate.**—Bulletin No. 29, of the Department of Industries and Commerce, United Provinces, embodies the results of a systematic investigation by J. B. Lal and K. C. Mukherji on the manufacture of calcium gluconate by the electrolytic oxidation of glucose. The cost of production on the laboratory scale, works out at Rs. 2-3-0 per lb., and it is expected that this will be much reduced when produced on a larger scale and by using locally made glucose, costing 4 annas a lb.

The Forest Research Institute, Dehra Dun, announces a method (*Indian Forest Leaflet* No. 19) for the preparation of a substitute for 'Carnauba Wax' using indigenous materials (shellac wax, bees' wax, and sal dammar). It is claimed that the substitute has properties very similar to 'Carnauba Wax' which is an essential base for the manufacture of carbon papers, polishes, etc.

V. S. G.

**Substitute for Metal Drums and Cans.**—Substitute containers to take the place of the usual metal drums and cans used for oils, paints, greases, dry goods and other stores have been evolved by the Forest Research Institute.

Owing to the diversion of much tin and sheet metal to army use, manufacturers in India are in sore need of substitute containers. The Institute anticipated this shortage many months back and started experiments on different types of plywood containers. It has now evolved many different designs of plywood drums, containers, canisters, boxes and buckets.

The plywood canisters used for food, dry goods and medical stores are normally lined with a shellac varnish unless required for some purpose which demands a special lining. The drums with iron bands round the top, centre and bottom, are made of strong plywood and are designed for oils, greases and paints. Various inner coatings have been tried and some have already passed the army tests. Ordinary glue is said to be a satisfactory inner coating for oils and greases.

**Containers for Parachute Dropping.**—Plywood buckets are coated on the inside with hard pitch which renders them waterproof. The round flat containers, specially designed to fit into larger containers made for dropping by parachute are proofed to hold water both for drinking purposes and for machine-guns.

Plywood prototypes of metal boxes can be used for a variety of purposes, such as for tubes of anti-gas grease, hypodermic phials, powders and pills.

Plywood factories in India have already started the manufacture of plywood drums on the lines of the models made at the Forest Research Institute. Plywood drums and containers may be widely adopted not only as a war-time expedient, but also in times of peace. They are easy to make and they should compete favourably with the metal articles.

**River Behaviour and its Control.**—A new subject—River behaviour, training and control—important for the maintenance of canal head-works and the training of rivers through bridges, figured prominently on the agenda of the annual meeting of the Research Committee of the Central Board of Irrigation in Simla which held its session from July 14 to 18.

Progress has been made in the study of river behaviour at the research stations. The task now undertaken by the Board and its Research Committee is, however, probably the first attempt in India to deal with the problem by a Committee of engineers and research workers.

Two other subjects included for the first time are "Soil Mechanics", in connection with earthen dams and canal banks, and "rainfall run off", dealing with the quantity and rate of discharge of floods from catchments of various sizes.

Among other subjects for discussion are: flow in rivers and canals, hydraulics of boulder rivers, methods of measuring discharges, design of distributory heads, design of canal falls, silting of reservoirs, staunching of canals to prevent loss of water and water-logging of lands.

**Quality of Indian Wool.**—For the first time in the history of India, a serious effort is made to compile data on the qualities and quantities of wool available in different parts of India [*Handbook on the Quality of Indian Wool* (Manager of Publications, Delhi), 1942. Pp. 49. Price As. 8 or 9d.]. The information collected has been carefully and systematically arranged, and the national importance of the Indian wool industry and the place it occupies in the international trade is clearly brought out. Though the quantity of wool produced in India is only about 2.4 per cent. of the world's output, the actual quantity is 85 million lbs., valued at about 4.2 crores of rupees per annum. The average yield per sheep is the lowest in the world, being about 1.9 lbs. per sheep per annum; the quality is again the poorest according to existing classification, though a fair percentage of it, if properly graded, can be used for the manufacture of better classes of goods and fetch high prices. This is clearly indicated in the tables on pages 36, 37 and 38 of the *Handbook*. Some useful suggestions have been made for the proper grading of Indian wool under "Proposed Classification" which, if followed, would result in securing a higher return to the sheep-rearer.

The subject of sheep-rearing and its economic importance to India has not received the close study it deserves, and it is hoped that a detailed study will be taken up in the near future.

The present study of Indian wool, according

to the Central Agricultural Marketing Department, is not by any chance exhaustive. Even in Provinces and States where considerable amount of money has been spent over long periods in improving the stock of sheep, very little systematic data on the qualities of wool produced are available. That there is an urgent need for such a scientific study of wool produced in India, is impressively brought home by the present publication which deserves careful study. The fact that Australia which to-day ranks first among the wool-producing countries of the world had only 20,000 sheep yielding an average of 3 lbs. of coarse wool per sheep per annum, in 1,800, and that by systematic and scientific study, she has improved her stock to 1,015 millions, yielding about 9 lbs. of the finest quality wool per sheep per annum, should be enough to impress on all those concerned with the welfare of India and her large agricultural population the urgent need for applying scientific principles for improving the stocks of Indian sheep and thus place this industry on a secure and prosperous basis. B. K. MURTHY.

**"Spotless" Sun for Two Days.**—Studies on the intensity of radiation from sun spots relative to the surrounding photosphere have revealed that the character of the radiation from a sun spot is independent of its position on the disc.

The theoretical study on the motion of gases in the sun's atmosphere and the experimental work on Zeeman-effect were continued. The occurrence of highly stripped atoms of iron, nickel, cobalt, etc., in the Corona has been investigated on the basis of the results of the dynamical study of the solar envelope. The conclusions so far reached indicate that these atoms probably originate in the interior of the sun at a depth of about 25,000 km. or more.

In 1941 a further fall in solar activity was indicated by several solar phenomena such as sun spots, prominences and hydrogen absorption markings. Observing conditions were slightly less favourable than in 1940.

Photographs of the sun in ordinary light were obtained on 322 days while spectroheliograms in calcium and hydrogen light were secured on 302 days and 262 days respectively. Under the existing scheme of co-operation among observatories, 63 photographs were obtained from observatories in England and America and 302 calcium disc spectroheliograms were sent from this Observatory to the Solar Physics Observatory, Cambridge.

**Laxmi Narayan Institute of Technology, Nagpur.**—We have pleasure in announcing that Dr. S. A. Saletore, Ph.D., has been appointed as Director of the Institute. Dr. A. Nagaraja Rao, of the Imperial Institute of Sugar Technology, Cawnpore, has been appointed Professor of Applied Physical Chemistry in the same Institute.

The Indian Ceramic Society was revived in March 1941, and the headquarters shifted to the Ceramic Department of the Benares Hindu University. The first number of the *Transac-*

tions was issued in September 1941, and the second number, which is under review, in April 1942. It is hoped to establish a central ceramic library and also a museum of ceramic products and Indian raw materials from which they are made. Contributions of technical books, journals, samples of manufactured goods and raw materials, with details of place of manufacture and occurrence, etc., may kindly be sent to the Hon. Secretary, The Indian Ceramic Society, Department of Ceramics, Benares Hindu University, Benares.

The University of Ceylon.—We have pleasure in announcing that the University of Ceylon was formally inaugurated at Colombo on the 14th July 1942, by Dr. Ivor Jennings, the first Vice-Chancellor of the University.

Ceylon's education was hitherto linked up with the University of London and although the creation of an independent University for Ceylon was under proposal for some years its inauguration so soon would not have been possible but for the extraordinary energy and enthusiasm of Dr. Jennings. His efforts have thus resulted in giving a fillip to the much

desired want in the educational system of the island.

The University is residential with faculties for arts and sciences, Oriental languages and medicine for the present. It is learnt that the faculty of law would be added later on.

The University of Delhi.—Academic circles in India will learn with pleasure and satisfaction that the University has been offered a gift of £2,500 by the Rhodes Trustees, towards the endowment of any professorship or lecturer-ship and preferably one of Political Science or English. This is in token of their good will and appreciation of the work now being done by the University.

### SEISMOLOGICAL NOTES

During the month of June 1942 five slight and two moderate earthquake shocks were recorded by the Colaba seismographs as against one very great, three moderate and three slight ones recorded during the same month in 1941. Details for June 1942 are given in the following table:—

Date	Intensity of the shock	Time of origin		Epicentral distance from Bombay	Co-ordinates of the epicentre (tentative)	Depth of focus	Remarks
		I. S. T.	I. S. T.				
4	Slight	12	37	(Miles) 4210	..	100	
6	Slight	20	23	5430	..	..	
10	Slight	15	51	3630	..	..	
14	Slight	08	40	5070	..	100	
14	Slight	20	00	3640	..	50	
18	Moderate	15	01	4540	..	..	Epicentral region in the neighbourhood of the Lanthe Shoal among the Cardine Islands.
24	Moderate	16	56	8110	Near Lat. 40°S., Long. 180° in the neighbourhood of the North Island, New Zealand.	..	Reported to have been felt at Wellington and other places in North Island, New Zealand. Heavy damage to property was done at Masterton and Palmerton. South Island was only very slightly affected.

## MAGNETIC NOTES

June 1942 was less disturbed than the preceding month. There were 20 quiet days and 10 days of slight disturbance as against 22 days of slight disturbance and 8 of moderate disturbance during June 1941. The day of largest disturbance during June 1942 was the 11th and that of least disturbance the 10th. The character of individual days was as follows:—

Quiet Days	Slightly disturbed days
1, 2, 4-10, 15-18, 20-22, 24-27.	3, 11-14, 19, 23, 28-30.

No magnetic storms occurred during the month of June 1942 while three moderate storms were recorded during the same month last year. The mean character figure for the month was 0.03 as against 1.27 for June 1941.

M. R. RANGASWAMI.

Colaba Observatory,  
July 17, 1942.

## ANNOUNCEMENT

The Director, Government Test House, Calcutta, has been pleased to notify as follows:— A wide variety of materials, including textile goods, electrical equipment and stores, building and general engineering materials, vacuum brake fittings, metals and alloys, minerals and ores and miscellaneous stores, such as oils, lubricants, paints, varnishes, chemicals, fuels, etc., etc., are tested in the Government Test House, Alipore, Calcutta, to determine their qualities. The charges for tests and analyses are laid down in the "Schedule of Charges" issued by the Government of India. There are two "Schedules of Charges"—one for the Government Departments and the other for private firms and individuals. Copies of these Schedules are obtainable at a nominal price from the Government Book Depots.

The facilities for testing provided in that Office are available to the general public no less than to Government Departments. Fees are charged for all tests carried out and test certificates bearing the Government seal are issued for all samples tested. Such test certificates can be used by firms and individuals for commercial purposes.

The Government of India are alive to the difficulties which nascent and undeveloped Indian industries may experience in getting their products tested at the Government Test House on payment of fees at the scheduled rates, and have given their anxious consideration to the question of affording some measure of relief in the matter of fees in cases which

stand in need of such concession. The question of revision of the schedule of fees is under consideration, and pending a final decision on the subject it has been decided, as an experimental measure for a further period of one year, to reduce the testing fees to a certain definite extent in cases where Government are satisfied as to the need for concession.

Firms and individuals intending to take advantage of this concession are requested to apply to the Director, Government Test House, Alipore, Calcutta, substantiating their claim to such concession.

The Government of India have also made provision for the total exemption from payment of fees in specially deserving cases, and firms and individuals, who consider themselves to be in that category, should apply to the Director, Scientific and Industrial Research, University of Delhi, Delhi. On receipt of such applications, the Director, Scientific and Industrial Research, will arrange matters with the Government Test House if he considers that tests free of cost are justified.

We acknowledge with thanks receipt of the following:—

"Journal of the Royal Society of Arts," Vol. 90, Nos. 4607, 4609, 4610 and 4612.

"Journal of Agricultural Research," Vol. 64, Nos. 5-6.

"Agricultural Gazette of New South Wales," Vol. 53, Pt. 4.

"Journal of the Indian Botanical Society," Vol. 21, Nos. 3 and 4.

"Indian Forester," Vol. 68, No. 7.

"Transactions of the Faraday Society," Vol. 38, Pts. 4 and 5.

"Indian Farming," Vol. 3, No. 6.

"Indian Central Jute Committee," Vol. 5, No. 3.

"Review of Applied Mycology," Vol. 21, Pt. 3.

"Nature," Vol. 149, Nos. 3773, 3776-80 & 3782.

"American Museum of Natural History," Vol. 49, No. 3.

## BOOKS

"Essays in Anthropology," presented to Rai Bahadur Sarat Chandra Roy. Edited by J. P. Mills, B. S. Guha, K. P. Chattopadhyay, D. N. Majumdar and A. Aiyapan. (Maxwell & Co., Lucknow), 1942. Pp. 268. Price Rs. 12 or £1-1.

"Vitamins in Nutrition." (Merek & Co., Rahway, N.J.), 1942. Pp. 32.

"An Introduction to the Chemistry of Cellulose," by J. T. Marsh and F. C. Wood. (Chapman & Hall, London), 1942. Pp. xv + 512. Price 28sh.

"Organic Chemistry," by P. B. Sarkar and P. C. Rakshit. (H. Chatterjee & Co., Ltd., Calcutta), 1942. Pp. vi + 562. Price Rs. 5.

## ERRATA

Vol. 11, No. 6, June 1942, page 242

In the legend below Fig. 1, read "right" for half of the page, line 3, the word "right" should be read as "left".