

CENTENARIES

Manning, Robert (1784-1842)

ROBERT MANNING, an American pomologist, was born at Salem, Mass., July 18, 1784. His business was first that of a broker and later that of a stage-coach manager. In 1817, he began in a small way to collect choice varieties of fruits. In 1823 he established a pomological garden. Getting into touch with many noted fruitmen of Europe, he imported many scions and trees of choice varieties, in spite of the risks due to the slowness of pocket boats in those far-off days. At the time of his death he is said to have possessed the finest collection of fruits in America and one of the best in the world, consisting of over 1,000 varieties of pears alone and nearly as many more of the other fruits combined. His *Book of fruits* (1833) is a valuable catalogue of many "varieties of pear, apple, peach, plum and cherry" and is responsible for having established correct nomenclature of fruits and means of identification.

Manning died October 10, 1842.

Wigner, George William (1842-1884)

GEORGE WILLIAM WIGNER, the founder of the Society of Public Analysts, was born at Lynn October 19, 1842. Though he showed a liking for chemistry, he had to find employment in a bank for the first five years. After hearing him give a scientific lecture, Mr. Frank Hills employed him in his chemical works, where he remained for four years taking out several patents for sewage treatment. By 1872 he began independent business. During the next twelve years he published twenty-five papers and two books: the *A.B.C. of sewage process* and the *Seaside water*. Wigner took an active part in promoting the Sale of Food

and Drugs Act of 1875. In the same year he founded the Society of Public Analysts and was the editor of the *Analyst* from its inception till his death. In 1880 he was rewarded by the National Board of Trade of the U.S.A. for drafting a Food and Drug Bill for them. In 1884 he acted as a juror in the International Health Exhibition at London and analysed some hundreds of food samples exhibited.

Wigner died of stricture of the œsophagus October 17, 1884.

Howell, Thomas Jefferson (1842-1912)

THOMAS JEFFERSON HOWELL, an American botanist, was born at Pisgah, Montana, October 9, 1842. He went to school only for six months; but he acquired a little knowledge of English and Latin by his own efforts. He was a farmer; but he soon developed an interest in studying the flora of his district and built a herbarium, which contained about fifty new species. *Picea breweriana* is said to be one of the discoveries of Howell and it is claimed that it should have been named *Picea howellii*. By 1887 he was in a position to publish *A catalogue of the known plants of Oregon, Washington and Idaho* which was the first book of the kind for that region. He next thought of publishing a flora for the same region. But as he was too poor to pay the printer, he learnt the compositor's art and though he was too illiterate even to syllabify words, he composed and printed his *Flora of North America* between 1897 and 1903. This is said to be still the only flora for the three States it covers.

Howell died at Portland December 3, 1912.

S. R. RANGANATHAN.

University Library,
Madras.

SCIENCE NOTES AND NEWS

Vitamin Content of Honeys.—Honeys obtained from various regions of Minnesota, from other localities of the U.S.A. and a few samples of foreign honeys, when tested by micro-chemical and microbiological methods for the presence of various vitamins, were found to contain thiamine, riboflavin, ascorbic acid, pyridoxine, pantothenic acid and nicotinic acid (*J. Nutrition*, 1942, 23, 280). The different samples showed a considerable variation in their vitamin content, which is given below. It is suggested that these variations may be partially due to the variable amounts of pollen present in honey.

Thiamine 2.1-9.1 µg./100 g. Riboflavin 35-145 µg./100 g. Pyridoxine 227-480 µg./100 g. Pantothenic acid 25-192 µg./100 g. Nicotinic acid 4-94 mg./100 g. Ascorbic acid 0.6-6.5 mg./100 g.

The samples of honey tested appear to be rich in pyridoxine, pantothenic acid and nicotinic acid.

Clarification with diatomaceous earth, although it increases the attractiveness of honey, tends to reduce its vitamin content; hence it is recommended to avoid such a procedure.

K. B.

Micro-Straining for Water Purification.—Until recent years, large-scale open strainers were not considered for any duty other than the removal, from flowing water of the larger floating and suspended solids. For the removal of finer suspended impurities, flocculation, sedimentation, and sand filtration were used, these processes being employed alone or in combination. Fine strainers could not be used except

for water with very low suspended content, due to the rapid blockage to which fine screens were subject. With the advent of automatic rotary type continuously self-cleaning strainers, it has become practicable to employ fine screens of the order of 100 to 150 mesh with apertures 142μ to 89μ . According to D. L. Boucher (*Engineer*, 1942, 163, 420-2, 445-7) it is now feasible to produce and use very much finer microstraining medium by controlled bright electro-plating of nickel on 325 mesh wire cloth. The original apertures in the 325 mesh of 39μ , can be plated down to 25 to 5μ , with a parallel increase in strength of the cloth and resistance to corrosion. From considerations of flow capacity and straining efficiency, the most effective aperture is found to be 15 to 25μ (average 20μ). For a river water containing not more than 2 parts per 100,000 of suspended solids, the "rating" for a 1" difference of level is 174 "vertical" feet per hour, compared with 19' to 38' per hour for rapid sand filters. The plated wire cloths can be used with waters with pH values 5.5 to 9.0, thus covering all ordinary natural and industrial waters. Arrangements are in progress for a standard self-cleaning rotary strainer of 100,000 gallons per hour capacity fitted with microstrainer cloth, to be installed by one of the largest English undertakings.

Public Health and Nutrition.—Writing in the *Indian Medical Gazette* (September 1942, 77, No. 7) W. R. Aykroyd says that there is no lack of evidence that nutrition is a factor of basic importance in public health. The first essentials for the prevention of disease are higher standard of health, a healthy physique and a greater power of resistance to infection. These can only be attained if food of the people is such as will give all the physiological and nutritional requirements of the human frame. Actually it is quite impossible to make any satisfactory quantitative assessment of faulty and insufficient diet as a disease-producing factor in India. Some light may however be thrown on the question by the study of available morbidity and mortality statistics.

At present there is very little accurate information about the causes of the high infantile mortality in India. As an example of how a deficient maternal diet may profoundly influence infantile mortality may be mentioned the incidence of high mortality in breast-fed infants, due to infantile beri-beri in the Northern Circars. In any ill-fed population group whether human or animal it is the newly born and the very young that suffer most severely from ill-effects of malnutrition. The causes of high infantile mortality in India have not been fully investigated. In this connection the observations of Hass (1940) in Java are significant. There is no reason to suppose that the state of nutrition of poor children in most parts of India is in any way better than that of children in Batavia, and the conclusion of Hass, that malnutrition is a major factor in causing disease and death in young children, can probably be applied to India. As regards maternal mortality, while a quantitative assessment is impossible it is reasonable to suppose that diet

deficiency is responsible for much of the illness among pregnant women in India.

Regarding the relation between nutrition and various common diseases of India it may be of interest to note the effect of famine on birth rate, death rate and the influence of food scarcity and famine on the incidence of various diseases. A large percentage of the population in India lives on a diet which is defective in quality and often in quantity. It is not unreasonable to suppose that the incidence of diseases which become more prevalent in times of food scarcity is influenced by diet in normal times.

The vital statistics of India, inaccurate though they may be, provide clear indications that nutrition work is an essential part of public health activity. The improvement of diet is of essential importance if the goal of a healthy nation is to be attained.

Emergency Economies in Tin.—Both in the United States and in Great Britain every use of tin is scrutinised by groups of experts, in order to effect the utmost economy in the use of the very limited supplies of tin at present left to the United Nations. This is sought to be achieved not by a flat percentage reduction but by demanding the intelligent co-operation of every user, so that these economies are compatible with a minimum of reduction in the war effort. The Tin Research Institute, whose original object is to develop new and increased uses of tin, are now collaborating in devising methods and processes for the most efficient use of the available supplies. Thus the current number of *Tin and Its Uses* (No. 13), July 1942, discusses the advantages of thinly coated electrolytic tinfoil as a substitute for ordinary tinfoil and describes an automatic plant suitable for plating batches of standard sized sheets. Other articles on "Bearings with less Tin" and on "Economy of Tin in solder" deal with the same economy theme. Many of these efforts are besides bound to be of permanent value. Thus, instead of a normal plumber's wiped joint, it is found that lead pipes can be very effectively jointed by sweating with solder foil a pair of suitably shaped cup and cone ends and at the same time a 99 per cent. saving in tin effected.

Use of Colchicine in Preventing the Development of Plant Tumors.—Crown gall of apple, tumors on "paris daisy" have been the object of serious investigation by both pathologists and anatomists. The tumors greatly impair the vitality of the plant, and are caused by *Bacterium tumefaciens*. Recently, Brown (*Phytopathology*, 29, 221-31 and 32, 25-46) has shown that their development can be controlled, if not prevented by the use of colchicine. Young tumors on tomato, marigold, Bryophyllum and others were dusted with colchicine. After three or four weeks the tumors showed distinct shrinkage and actually disappeared in some cases. The same results were, however, not obtained by the use of the other chromosome doubling substances such as acenaphthene, *a*-methylnaphthalene, *a*-nitro-naphthalene and others.
M. J. T.

Palaeobotany in India.—The third number of the Progress Report (for the year 1941) on Palaeobotany in India, published at Lucknow under the editorship of Prof. Birbal Sahni, F.R.S., which has just been issued, opens with an Obituary Note on the death of Albert Charles Seward, the doyen of palaeobotanists “whose noble personality, no less than his vast learning, was a fountain-head of inspiration to the Indian School of Palaeobotany”. Then follows a brief account of recent work being done on plant fossils from several rock formations in India, arranged in the stratigraphical order, of which the following studies may be noted: (i) “The microflora of some carbonaceous shales from the lower Gondwanas of the Mirzapur District, by Mr. K. R. Mehta (Benares); (ii) “The plant remains from the Triassic of the Salt Range”, by Mr. R. V. Sitholey (Lucknow), including the first record of a pteridospermous microsporophyll from India; (iii) “The microflora of the Andigama (Ceylon) shale”, by Miss Janet and Prof. Sahni (Lucknow), the composition of which is strongly in favour of assigning a Jurassic age to the containing beds, as has already been suggested on other grounds; (iv) The Cycadeoidea recently collected from the cretaceous beds near Ariyulur, Trichinopoly District, and being described by Dr. K. Jacob and Mr. N. K. N. Iyengar (Calcutta); (v) The petrified angiospermic flowers recently collected by Mr. V. B. Shukla (Lucknow) from the Deccan inter-trappean beds near Mohgaon Kalan which have been shown to belong to the same plant, the fruit of which was recently described by Prof. Sahni under the name *Enigmocarpon parijai*; (vi) The fossil algæ from (a) the Eocene beds of Assam, by Mr. K. S. Rao (Tumkur), containing two new species of *Archæolithothamnium*, and (b) The tertiary beds of N.W. Frontier Province, Sind, and Andaman Islands, by Mr. S. R. N. Rao (Bangalore); (vii) “The pleistocene flora from the Karewa beds of Kashmir”, by Mr. G. S. Puri (Lucknow), which has been so far shown to contain 122 species belonging to 62 genera and 34 families of angiosperms, 6 species belonging to 5 genera of gymnosperms, and some ferns.

Tin Research Report.—In the Tin Research Institute's Report for 1941 it is stated that since Japan began the Far Eastern campaign the main problem has become one of how to make the best use of the supplies available, by curtailing the use of tin in commodities not essential to the war effort, by improving the processes in essential uses, and by recovering tin.

For these tasks, the experience accumulated by the Institute is invaluable, and it has been appointed by the Ministry of Supply to advise on all technical questions affecting the use of tin.

The Institute's hot-tinning plant was in continuous operation throughout the year, and much assistance was rendered to manufacturers in tinning some kinds of steel which have hitherto been difficult to tin.

Collaboration with manufacturers and with Government departments in the application of

electro-tinning for parts of armaments was continued during the year, and there has also been considerable interest in electro-tinning for small soldering tags, terminals and clips. It will soon be possible to produce specially thinly coated tinplates, as a war economy measure, requiring only one-third of the tin used on normal tinplate.

Other sections of the Report review the progress made in research on tin-rich bearing alloys, foil and bronzes. Copies may be obtained free of charge from the Tin Research Institute, Fraser Road, Greenford, Middlesex.

Indian Central Jute Committee.—The Annual Report of the Committee for 1941-42 reveals that investigations during the year into the agricultural, technological, marketing and economic problems of jute have now reached an important stage. Noteworthy successes have been achieved in the official jute forecasts through improved sampling survey techniques developed under the technical guidance of Prof. P. C. Mahalanobis. Effective control measures have been evolved for the control of almost all the important insect pests of jute and are awaiting large-scale trials. By organising Grading Parties and Co-operative Jute Sale Societies, the farmers are now being educated in marketing their produce more profitably. The Committee's monthly organ, the Bulletin, containing available important trade and statistical information bearing on jute is getting increasingly popular and is published regularly.

Effect of Storage on Indian Vegetable Oils.—J. S. Aggarwal has made an interesting study of this subject (Industrial and News Edition of the *Journal of the Indian Chemical Society*, 1942, 5, 121). It is found that although vegetable oils become more oxidised when stored in tin containers than when stored in glass ones, the changes are less than in the case of oils stored in plain steel vessels. However, ghee and tallow showed more oxidation in tinned containers, than in plain steel or glass ones. This may be true for all animal fats, as it has been found that this metal (tin) acts as an effective surface catalyst in the oxidation of lard.

Cork Substitute.—It is reported that cobs (cobs without grain) of the Indian maize (Zeemayes) form a good substitute for the corks if properly finished (L. D. Mahajan, *Science and Culture*, 1942, 8, 139). These cobs are conical in shape, light in weight, and compressible in structure. The cobs are cut into pieces of desired length, their rough surface smoothed with sand paper and then they are soaked in molten paraffin for a minute or two. Corks so prepared have sufficient resilience as well.

Spark Testing of Steels.—The use of grinding sparks to identify steels is an established method and has been employed in steel mills for a number of years. The equipment required is simple; a portable grinder (a light one), a pair of safety goggles, and a set of

standard steels of known compositions. It is advisable to keep to a single type of wheel, sufficiently hard but soft enough to retain a free cutting face; and with normal pressure exerted on the wheel, its peripheral speed should be approximately 4,000 ft. per minute. Satisfactory results can be obtained with diffused daylight and a fairly uniform background.

L. P. Tarsov (*Iron Age*, 1942, 149, 39-43) has now shown how this art can be extended to classify scrap, and to be practised by less well-trained staff as well. The volume of the spark and the intensity of bursts are very characteristic. Stainless steel sparks are much shorter than those coming from low alloy and carbon steels, while most of the tool and die steels show the characteristic features associated with either a tungsten or high-chromium content material. A useful bibliography is appended.

Rectangular Plywood Containers.—"Owing to the fact that round containers take up much space in storage transit, a rectangular plywood container has been designed by the Forest Research Institute, Dehra Dun. The four sides are made of sheets of ordinary commercial 3-plywood. These are joined together by bent plywood corner pieces; rivets being used for fastening the corner pieces to the side sheets. The top and bottom of the container are of 7-plywood and are fixed in precisely the same way as in the round plywood containers described in Forest Research Institute Leaflet No. 24. All other fittings are the same as in the round containers. The corner pieces are very easily made with the aid of "V"-shaped male and female iron moulds, made from pieces of ordinary angle iron. The moulds are heated over a fire, or on a stove, until they attain a temperature of about 150° F. The veneers are then placed in the moulds (after applying casein cement as for making ordinary plywood), and pressed into shape. It is considered that these containers will be found suitable for greases, powders and solids in sizes upto 60 lbs., and for liquids, oils and paints upto 5 gallons."

Associateship in Sugar Technology.—The following candidates are declared to have passed the final examination for the Associateship of the Imperial Institute of Sugar Technology, (A.I.I.S.T.), held in July 1942. The names are in order of merit.

SECOND DIVISION: (1) Phanindra Bhusan Bhattacharjee, (2) Bimalendu Chakravarty, (3) Shaukat Hussain Ansari, (4) Sushil Kumar Bose.

University of Ceylon.—The first Convocation of the University of Ceylon was held on the 14th October 1942, at the University College, Colombo, with all the customary ceremonial and dignity associated with such events. Besides the Chancellor, H. E. the Governor of Ceylon, and the Vice-Chancellor, Dr. Ivor Jennings, there were seven other distinguished recipients of Honorary Degrees of the University. Two of them were drawn from the Buddhist Order and honoured for their Oriental learning. Two eminent Indians, namely, Sir S. Radhakrishnan, Vice-Chancellor of the Benares Hindu University, and Dr. A. Lakshmanaswamy Mudaliar, Vice-Chancellor of the Madras University, were conferred the Degree of Doctor of Laws (*in absentia*). This gesture of admiration for Indian scholarship must contribute towards fostering a closer cultural relationship between the two neighbouring countries.

Bauxite Deposits in South India.—The presence of important deposits of bauxite in the Shevaroy Hills in South India has been revealed as a result of investigations carried out by the Geological Survey of India following on preliminary work by a local prospector. The numerous analyses made show that the ore is of good quality, containing a high percentage of alumina.

Indian Central Cotton Committee.—There has been an erroneous announcement in the note on the monsoon meeting of the Indian Central Cotton Committee, as published in *Current Science* (September 1942, 11, No. 9, p. 381, left column, para 4, line 5). The pilot plant for production of chemical cotton will be located in the compound of the Technological Laboratory of the Indian Central Cotton Committee, and not in the precincts of the new Bombay University Technological Laboratories.

SEISMOLOGICAL NOTES

During the month of September 1942, two slight earthquake shocks were recorded by the Colaba seismographs as against two slight and eight moderate ones recorded during the same month in 1941. Details for September 1942, are given in the following table:

Date	Intensity of the shock	Time of origin I. S. T.		Epicentral distance from Bombay (Miles)	Co-ordinates of the epicentre (tentative)	Depth of focus (Miles)	Remarks
		H.	M.				
3	Slight	14	14	1800
24	Slight	10	09	3140	Epicentral region probably located in the Sulu Sea.

MAGNETIC NOTES

Magnetic conditions during September 1942 were less disturbed than in the previous month. There were 13 quiet days, 16 days of slight disturbance and one of moderate disturbance as against 6 quiet days, 18 days of slight disturbance, 5 of moderate disturbance and one day of very great disturbance during September 1941.

The quietest day during September 1942 was the 28th while the 12th was the day of largest disturbance.

The individual days were classified as shown below.

Quiet days	Disturbed days	
	Slight	Moderate
3-5, 7, 9, 10, 23-26, 28-3)	1, 2, 6, 8, 11, 12-22, 27	12

No magnetic storm was recorded during September 1942 while 3 storms, two of moderate intensity and one of very great intensity, were recorded during September 1941.

The mean monthly character figure for September 1942 was 0.60 as against 1.00 for the same month last year.

A. S. CHAUBAL.

ANNOUNCEMENTS

The Government of India have for some time been considering the question of revising the present method of control of imports of drugs and medicines from abroad to ensure that only the most suitable medicines and in the most suitable quantities are imported under the Import Trade Control Scheme. They have now decided to set up for the purpose an Advisory Panel on drugs and medicines with the following terms of reference: "To advise the Government of India as to which drugs and medicines, other than those the formulas of which are included in the official pharmacopœias of the exporting countries, it is essential to import into India from abroad."

(The term 'Official Pharmacopœias' includes the British Pharmacopœia, the British Pharmacopœia Codex, the United States Pharmacopœia, and the National Formulary of the United States of America.)

The Panel will consist of officials and non-officials and will include representatives of the drug trade and industry as well as medical and scientific experts. Its work will largely be conducted by correspondence. Ultimately, however, it will meet at the headquarters of the Government of India when a state of final decision has been reached. The following

are the members of the Panel: (1) Brevet Col. Sir R. N. Chopra, C.I.E., I.M.S. (Retd.), Director, Drug Research Laboratory, Jammu and Kashmir State (*Chairman*); (2) Dr. B. N. Ghosh, M.B.E., F.R.F.P. & S. (Glas.), L.M. (Dublin), F.S.M.F. (Bengal), F.R.S. (Edin.), Professor, Carmichael Medical College, Calcutta; (3) Lt.-Col. G. R. McRobert, M.D., C.H.B., D.T.M. & H., I.M.S., Government General Hospital, Madras; (4) Dr. W. R. Aykroyd, M.D., Director, Nutrition Research Laboratories, Cooncor; (5) Sir Hari Shanker Paul, C/o Messrs. B. K. Paul and Co., Ltd., Calcutta; (6) E. B. Fairbrass, Esq., M.P.S., General Manager, Messrs. Keap & Co., Bombay; (7) Dr. B. Mukerjee, D.Sc., M.D., F.A.P.H.S., Director, Biochemical Standardisation Laboratories, Calcutta.

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"Journal of the Indian Chemical Society," Vol. 19, Nos. 7 and 8.

"Indian Forester," Vol. 68, No. 10.

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"The Mathematics Student," Vol. 10, No. 1.

"Journal of the Indian Mathematical Society," Vol. 6, No. 2.

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"Indian Journal of Physics," Vol. 16, Parts 3 and 4.

"Canadian Journal of Research," Vol. 19, No. 9.

"Science," Vol. 95, Nos. 2473, and 2478.

"Sky," Vol. 1, No. 8.

"Science and Culture," Vol. 8, No. 4.

"Indian Trade Journal," Vol. 146, Nos. 1891-1892; and Vol. 147, No. 1893.

BOOKS

You and Your Radio. By V. Lakshmana Rao. (Madras Law Journal Press, Mylapore, Madras), 1942. Pp. xvii + 187. Price Rs. 3.

Fundamentals of Vibration Study. By R. G. Manley. (Chapman & Hall, London), 1942. Pp. xii + 128. Price 13sh. 6d.

Spectroscopy and Combustion Theory. By A. G. Gaydon. (Chapman & Hall, London), 1942. Pp. x + 192. Price 17sh. 6d.

Lessons in Elementary Analysis. By G. S. Mahajani. (Mr. V. S. Barve, Poona Mathematical Club, Poona), 1942. Pp. viii + 298.