

The mechanical operations involved in the mounting of these finished optical parts into complete instruments, calls for no great equipment or outlay other than that of a modest workshop and good scientific guidance.

Thus, considered in every way optical or instru-

ment technology seems to be a line in which the attention of the scientifically educated but unemployed in India should get interested, and it is hoped that in providing the necessary training the Indian Institute of Science will play its part.

## Science Notes.

**Lady Tata Memorial Trust.**—The Trustees have announced the award of the following scholarships for the year 1934-35, on the occasion of the third anniversary of the death of Lady Tata:—*International Scholarships* (£ 400 per mensem) for research in diseases of the blood with special reference to leucæmias—Dr. Walter Bunge (Free Town of Danzig); Dr. Leonid Doljanski (Copenhagen); Dr. Martin Gril Gordon (Manchester); Dr. Charles Oberling (Paris); Dr. Julius Enzelbreth Holm (Copenhagen); Dr. Max Otto Kaalund-Jorgensen (Denmark); Dr. Rolf-Meier (Leipzig); Dr. Lucy Wills (London). *Indian Scholarships.*—(Rs. 150 per mensem). H. D. Srivastava (Allahabad); S. K. Ganguli (Calcutta); N. C. Datta (Bangalore); M. V. Radhakrishna Rao (Waltair); M. C. Nath (Dacca); A. R. Rajavanshi (Allahabad); B. D. Kochhar (Lahore); S. K. Mahabaleshwar (Manchester); K. N. Gaiind (Bangalore); and Y. V. Sreenivasa Rau (Bangalore).

**India Institute of the Deutsche Akademie** has announced 21 new scholarships for the academic year 1934-35, for carrying on higher studies in various German Universities. The successful candidates are:—(1) A. K. Ghose, M.Sc. (Chemistry); (2) B. C. Roy, B.Sc. (Applied Geology); (3) C. D. Dwarakanath, L.I.M. (Medicine); (4) S. G. Joshi, M.B.B.S. (Medicine); (5) S. K. Sharma, M.A. (Sanskrit); (6) K. P. Mukhopadhyay, M.A., B.L. (Political Science and Economy); (7) B. K. Kar, M.Sc. (Botany); (8) T. V. G. Menon, B.A., B.Sc. (Agriculture); (9) Y. V. Sreenivasa Rau, M.Sc., A.I.I.Sc. (Plant Physiology); (10) Miss P. B. Devi, B.Sc. (Physical Chemistry); (11) D. C. Lahiri, B.A. (Medicine); (12) T. L. Kannappan Naicker, M.A., L.T. (Physics); (13) S. Vahiduddin, B.A. (Philosophy); (14) I. R. Barua, M.B.B.S. (Medicine); (15) Miss A. M. Jansz, B.A. (Economics and Political Science); (16) G. Kadambi, M.Sc. (Mathematics and Statistics); (17) A. K. Mitra (Anthropology); (18) D. R. Mehta, B.Sc. (Pharmaceutical Chemistry); (19) R. Ramamohan Rao, B.E. (Civil Engineering); (20) A. S. Gupta, M.B.B.S. (Medicine); and (21) Satyaketu Vidyalkar (History).

**The Sir Pratap Singh Memorial Scholarships** (£100 each) tenable at the Indian Military Academy, Dehra Dun, have been awarded to Messrs. Muzaffar Khan (Campbellpore); Rawind Singh (Multan); Mahomed Sidiq Khan (Rawalpindi); and Wales (Rawalpindi).

**Imperial Institute Awards.**—The Imperial Council of Agricultural Research awards each year one Gold and two or three Silver Medals for improvements of distinct merit, in the science and art of Agriculture and Animal Husbandry of an All-India importance.

Applications are invited for the award of Medals during 1935 for Improvements in Dairying and Care of Animals. All entries should reach the Secretary, Imperial Council of Agricultural Research, through the proper channel by the 1st December 1934. Scheduled forms and other particulars can be obtained from the Secretary, Imperial Council of Agricultural Research, Simla.

Colonel Sewell, Leader of the Sir John Murray Expedition, and his colleagues who have been carrying on the Oceanographic Survey of the Arabian Sea since September last, have, according to a press report, made a spectacular discovery of the existence of a submarine mountain range running from Thagos Archipelago to Socotora in a line with Cape Guarda Firi on the East African Coast. Another submarine range was located in the Gulf of Oman running from North-East to South-East across the Gulf of Aden.

A Provincial Research Committee with Lt.-Col. N. W. C. Noel, Director of Agriculture and Allied Departments, as President, has been appointed by the N.W.F. Province Government with the object of preparing Research Schemes for consideration by the Council of Agricultural Research. The Committee will work in close co-operation with the Imperial Council of Agricultural Research.

A condolence meeting of the Staff and Students of the Royal Institute of Science, Bombay, was held on the 16th June to express deep regret and sorrow at the sad demise of Dr. A. N. Meldrum, the ex-Principal of this Institute. Dr. Meldrum was connected with the Institute for over 7 years, and it was under his able guidance that the germs of scientific research was first laid in the Institute in fact in Bombay Presidency. The Meeting passed a vote of condolence to the bereaved family of Dr. Meldrum and the Institute was closed on the 18th June as a mark of respect to his memory.

Dr. Mata Prasad, Professor of Physical Chemistry, Royal Institute of Science, Bombay, has proceeded to England on a six months' leave to study the latest technique in X-ray Photography and Crystallography, which is his special subject of research. Mr. C. L. Mankodi is now working in place of Dr. Mata Prasad.

Dr. W. McRae, D.Sc., F.L.S., Director, Imperial Institute of Agricultural Research, Pusa, has been granted long leave preparatory to retirement. He came to Pusa in 1908 but his services as Government Mycologist were lent to the Madras Government. He returned to Pusa again in 1919 and was appointed Director in 1931.



**Salt Manufacture in Bengal.**—The Government has issued a statement on the possibilities of salt manufacture in Bengal. The principal point at issue is the cost of manufacture, as on the Indian Market, Bengal salt, which as at present manufactured costs Rs. 3-3-0 to Rs. 3-13-0 per maund, cannot compete with salt manufactured in other parts of India; the imported salt sells at Rs. 2-13-0 to Rs. 3-3-0 per maund. A new method of production appears to have vast possibilities. This is based on the procedure now adopted in Burma; pits are dug in the factories situated on the Arakan Coast, and the sea water which percolates into these possesses a high degree of salinity and this can be profitably utilised for manufacture of salt by evaporation.

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**Life and Conditions of the People of Hindustan from 1200-1550 A.D.**—In a paper presented before the July Meeting of the Asiatic Society of Bengal, K. M. Ashraf has given an account of the social life in Northern India under the Muslim Sultans of Delhi before Akbar. For the collection of the data the author has made use of copious materials scattered in various Arabic, Persian and Nagari works, comprising surveys of general and special histories, accounts of travellers, books of poetry, folklore and fiction, legal compendiums, mystic literature and works on ethics, politics and various practical arts. The thesis is of interest for the understanding of the social interactions of Hindus and Muslims during the first period of their contact in Northern India and provides a proper background for the study of the later social developments.

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"Science" reports that the Sixth International Congress on Industrial Accidents and Diseases offers a prize of 1,000 Swiss francs as an award to the author of the best (unpublished) original work on the subject "The Importance of Previous Physical Condition in Estimating the Sequelæ of an Industrial Accident". Physicians in all countries are permitted to take part. Manuscripts must be on hand by 31st December 1934. The award will be made at the time of the Seventh Congress to be held in Brussels in July 1935.

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The Raja of Sarawak, Sir Charles Brooks, has given £20,000 towards the Fund for building a permanent and self-supporting Imperial Forest Research Institute at Oxford. The proposed Imperial Forest Institute will be of great assistance in developing the timber resources. It is stated that at present 80 per cent. of the supplies come from foreign countries. The Institute will provide facilities for studies to the officers of different Forest Departments.

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**Lighting for Cranes** [Illumination Research Technical Paper No. 15, His Majesty's Stationery Office (Price 3d.)].—This report describes the investigations to discover the most satisfactory system of crane lighting both from the point of view of the crane driver and of the workers on the quay by combining so far as possible adequate lighting with absence of glare.

While the paper itself is concerned only with shore cranes, it may often be both possible and desirable to apply the conclusions reached in other directions also.

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**Eradication of Water Hyacinths by Spraying.**—Mr. Subimal Bose of Calcutta, the discoverer of a new spraying preparation for the eradication of the pest, has been carrying out several successful demonstrations in and around Calcutta. When sprayed on the plants, the leaves and stems wither in about a week and the plant dies after a fortnight. The preparation appears to be free from ingredients endangering the life of men, animals or fish, and can be produced at a small cost so as to be within the reach of even poor cultivators.

According to Mr. Bose a spraying solution was prepared by Mr. T. S. Griffiths in 1921 for the eradication of water hyacinth. A Committee of Scientists who tested Mr. Griffiths' preparation opined that its value was doubtful.

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**A Twin Boll of Cotton.**—Mr. B. S. Nigam, Agricultural College, Cawnpore, writes to us about an unusual case of a twin boll of cotton which he observed a few weeks ago. "Cotton plant is known to produce single loculicidal capsules from solitary flowers. While passing through a field of cotton the author chanced to notice a twin capsule. Both the capsules were borne on a single peduncle and dehiscent as usual. The twin had two whorls of epicalyx. Each capsule had four compartments. Those on the inner side were smaller in size than the outer one. There were 33 seeds in both the capsules; 18 and 15 respectively."

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**Change of Sex in the Male Plants of *Carica papaya*, Wild, by Decapitation.**—Mr. G. P. Mujumdar, Presidency College, Calcutta, in the course of a communication on the subject, writes, "In the May issue of *Current Science* (1934, 2, 428), Mr. S. Sarup published a note on 'Sex Control in Papaya'. Evidently he thought that his was the second report of the phenomenon, the first being made by Wilcox in 1916. Reyes, however, published a paper in 1925, and as early as 1930, I read another paper, for the first time in India, before the Botany Section of the Indian Science Congress, in which I pointed out from my own observation that (1) this method of changing sex in papaya is to some extent successfully practised in Deoghar (Bihar), (2) the best results are seen in transplanted plants, and (3) sometimes repeated toppings are necessary to effect the desired change.

In one respect, however, Mr. Sarup's paper is interesting. He reports cent per cent success, and his plants were transplanted ones. Thus he supports my second observation. The very small percentage of success in the Hawaii Experiments only 2 out of 22 and 83 plants might be, it seems to me, due to the experiments being carried on in non-transplanted plants."

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**A Curious Abnormality in Rose.**—Mr. S. Sarup in a communication describes a curious abnormality he observed in a garden at Jodhpur. He says, "The rose flower had been pierced by the axis and the axis had continued its growth after that, producing three leaves at the first node about 2½ cms. above the insertion of the flower. At the second node 4 cms. higher up another leaf was produced. The axis then terminated in a flower. The leaves were all perfectly developed. The flower that had been pierced consisted of the usual number of sepals, one recurved and five



petals. The petals were about 3 cms. long and appeared to clasp the protruding stem. The internodes between the insertion of the pierced flower and the first node above being shorter in length than the petals, the three leaves arising at this node appeared to come out of the flower. One petal, however, had opened out. There was no trace of the presence of the essential organs.

The midrib, the veins and the margin of the leaves above the pierced flower had the same pink colour as the petals. Under reflected light the whole leaf gave the pink hue. This was not the case with the leaves below the pierced flower. The axis had continued its growth to produce the leaves and another flower."

*Tetrahedrite as a Silver Enrichment Mineral*:—Mr. S. Krishnaswamy, University College, Rangoon, writes:—"From time to time many investigators scattered the world over, have shown that the silver-content in many ore-bodies have become appreciably augmented when some sulphides like the pyrites, tetrahedrite, etc., are found in association with the silver ore-minerals.

In 1931, while studying some Burma Argentiferous Galena ores under the Metallographic Microscope, by the polished Ore-methods it was noticed, that tetrahedrite was functioning in the case of the Burma ore as a silver-enricher. So to say, wherever the Argentiferous Galena Ore was found accompanied by tetrahedrite, the silver content of such ores were appreciably more than the average normal assay value for such ores occurring in the same lode but unaccompanied by the presence of tetrahedrite."

We acknowledge with thanks the receipt of the following:—

"Nature," Vol. 133, Nos. 3367 to 3370.

"The Chemical Age," Vol. 30, Nos. 776 to 779.

"Canadian Journal of Research," Vol. 10, No. 5.  
 "The Journal of Chemical Physics," Vol. 2, No. 5.  
 "The Biochemical Journal," Vol. 28, No. 2.  
 "Berichte Der Deutschen Chemischen Gessellschaft," Jherg. 67, No. 5.  
 "Natural History," Vol. 34, No. 3.  
 "Journal of Agricultural Research," Vol. 48, Nos. 3 & 4.  
 "American Journal of Botany," Vol. 21, No. 5.  
 "Journal de Chemie Physique," Tome 31, No. 4.  
 "The Review of Scientific Instruments," Vol. 5, No. 5.  
 "The Mathematics Student," Vol. 2, No. 1.  
 "Scientific Indian," Vol. 11, No. 65.  
 "Indian Forester," Vol. 60, No. 6.  
 "Medico-Surgical Suggestions," Vol. 3, No. 5.  
 "The Quarterly Journal of the Geological, Mining and Metallurgical Society of India," Vol. 5, No. 3.  
 "Contributions from Boyce Thompson Institute," Vol. 6, No. 2.  
 "Forschungen und Fortschritte," Jahrgang 10, Nos. 15 & 16.  
 "The Indian Journal of Agricultural Science," Vol. 4, No. 2.  
 "Indian Forest Records," Vol. XX, Parts 1 to 5.  
 "The Nagpur Agricultural College Magazine," Vol. 8, No. 4.  
 "The Indian Trade Journal," Vol. CXIII, Nos. 1456 to 1461.  
 "The Journal of the Indian Mathematical Society," Vol. 13, No. 1.  
 "Department of Commercial Intelligence & Statistics in India—Monthly Statistics of the Production of Certain Selected Industries of India," March 1934.  
 "Journal of the Institute of Brewing," Vol. XL, No. 6.  
 Government Museum, Madras. Bulletin—New Series, Vol. 1. Part 3. "Tirupattikumram and Its Temples."

## Reviews.

**FIRST OVER EVEREST—THE HOUSTON-MOUNT EVEREST EXPEDITION, 1933.** By Air-Commodore P. F. M. Fellowes, D.S.O., L. V. Stewart Blacker, O.B.E., P.S.C., Colonel P. T. Etherton, and Squadron Leader the Marquess of Douglas and Clydesdale, M.P. (John Lane, The Bodley Head Limited, London.)

"First Over Everest" is the official account of the Houston-Mount Everest Expedition of 1933. The plan of an expedition by air against the mountain was submitted by Major Blacker of the Indian Army in March 1932 to the Royal Geographical Society of London and in April 1933, two Westland planes flew over Mts. Everest and Kanchenjunga at a height of 32,000 ft. The maturing of the plan, the development of the organisation, the preparation for the flight, and the actual carrying out of the

enterprise are fascinatingly told in this volume.

The scientific object of the expedition "consisted in a demonstration of mapping by air survey methods, of the inaccessible cliffs, glaciers and valleys of the southern side of Mount Everest. The aim was not so much to produce an extensive map of any immediate practical utility, as to demonstrate to the world, especially to the non-technical portion of it, the relative quickness with which such a map might be made of a region forbidden to ground methods not only by policy, but also by the physical obstacles of the country." To take good survey photographs from the air in a clear atmosphere over a level country is a comparatively simple matter, but over mountainous country with varying distances of the earth's