Science Notes.

Improvising a Paraffin Bath.—Mr. Beni Charan Mahendra, St. John's College, Agra, writes under date 24th August, 1935:—"Last year, as I did not have sufficient money to buy a paraffin bath for my room, I made one for myself according to a suggestion of McClung.[1] The apparatus did not cost me more than five rupees, and besides being simple, it works as efficiently as an elaborate water-bath with a thermo-regulator can. I pass on the suggestion in the hope that somebody in a situation similar to mine may find it useful.

All that is required is a 100–150 watt gas-filled, electric bulb, a small glass beaker and a clamp-stand. The apparatus is set up as shown in the figure, the beaker is filled up with the paraffin

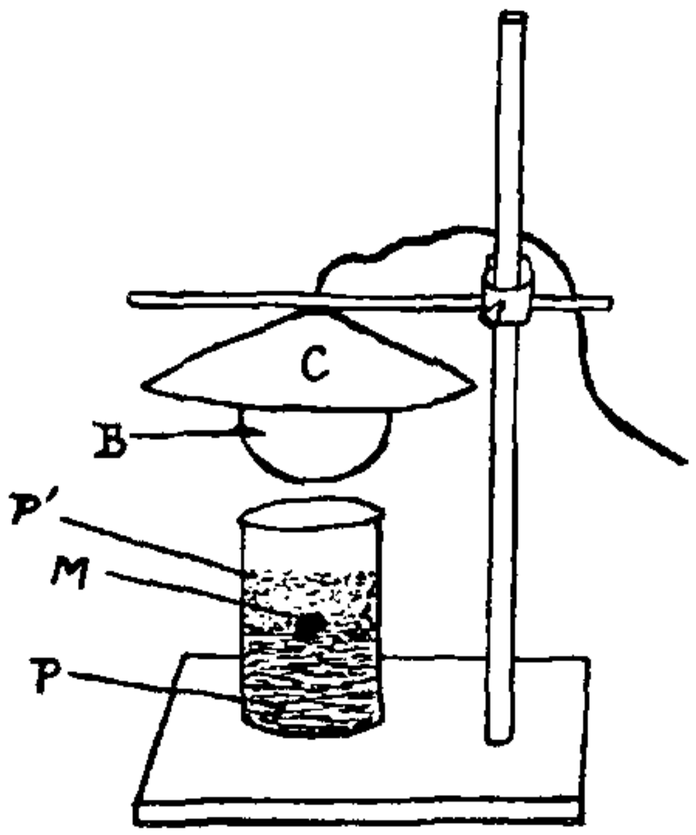

Fig. 1.

The Improvised Bath.

B, electric bulb; C, Shade for the bulb; P, Solid paraffin; P', Molten paraffin; M, Object to be infiltrated.

of desired melting-point, and the bulb is lighted. The heat given out by the bulb melts the upper layers of paraffin, while the lower layers remain solid. According to the principle of latent heat, the temperature of the paraffin cannot rise above its melting-point as long as there is some solid paraffin left over. The height of the bulb can be adjusted with this end in view, and there is absolutely no necessity of any thermo-regulating device. The object to be imbedded can be transferred to this bath as soon as the upper paraffin has melted. To keep off dust from getting into the paraffin, a sufficiently large wooden-case can be modified to accommodate the whole apparatus inside.

Another cheap method of building a paraffin bath for oneself, which I have not tried, is given by Ballantyne.[2]

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[1] McClung, C. E., *Handbook of Microscopical Technique.* (Paul B. Hœber, Inc., 1929, 13.)

[2] Ballantyne, F. M., *An Introduction to the Technique of Section-Cutting* (E. & S. Livingstone, Edinburgh, 1928, pp. 23—25.)

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Recent Archæological Discoveries in S. India.—The discovery of (1) *an inscribed pot from Guntur District*, by Prof. K. A. Nilakanta Sastri, (2) *a Chola Image of Manikkavachaka and some other Images found associated with it*, by Mr. T. N. Ramachandran, and (3) *Prehistoric pottery from the Cuddapah District, including a sarcophagus in the form of a ram*, by Mr. M. D. Raghavan, are among the important announcements made at a recent meeting of the Archæological Society of South India. The pot described by Prof. Nilakanta Sastri bore an inscription in Brahmi characters of the end of the second or the beginning of the third century A.D. and probably recorded that the contained ashes were those of Aryadeva, a man known to have been a pupil of Nagarjuna. The image of *Manikkavachaka*, discovered by Mr. T. N. Ramachandran, was found buried near Madukkur in the Pattukottai Taluk of Tanjore, and bore an inscription in the hand in characters of the period of later Cholas. Mr. M. D. Raghavan's discovery refers to pottery found at Markapuram in the Badval Taluk of Cuddapah District, at a depth of six feet with a unique *sarcophagus*. The sarcophagus possessed a clearly modelled head of a ram the curved horns being emphasised but the ears and tail omitted. It contained a fractional human interment, evidently a secondary burial. The bones were much decayed. The worn state of the molars and the condition of the skull sutures show them to have come from an adult person. It is hoped that this find is only the beginning of a series of similar ones, ultimately leading to the establishment of a much-needed pottery time-scale for South India.

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Some Chemists of Yesterday—formed the subject of the inaugural address to the Chemical Society, University of Mysore, delivered by Dr. Gilbert J. Fowler, D.Sc., F.I.C., on Saturday, the 31st August at Central College, Bangalore. The address was largely autobiographical and contained glimpses of the inspiring work and character of the giants of chemistry, Professors Roscoe, Schorlemmer, Victor Meyer, Gatterman, Dixon, Perkin and others. "The chemist who had learnt his science during the last decade or so, would seem to belong to quite a different school from that of the preceding fifty years." "Modern Chemistry is concerned with the intimate nature of atoms and molecules and their individual reactions, while in the days before isotopes we dealt with mass reactions and were concerned mainly with mass phenomena."

Referring to the teaching of chemistry in India, the lecturer often felt that Indian students suffer under a disability in that much of their training is of necessity at second hand. "Nothing at second hand, *e.g.*, could equal the impressiveness of a lecture by Roscoe on Vanadium, when he described the researches which had enabled him to place this element in its proper place in the periodic table and showed samples of the numerous compounds isolated in the course of the research. In this way it was learnt how new knowledge was actually made and the whole subject was removed from the text-book atmosphere." The number of those who have made real "Path-breaking" research is

increasing in India so that the Indian student has not necessarily to go to Europe for Education. Dr. Fowler concluded the address with a quotation from a recent discourse of Professor Bone, himself a student and colleague of Dixon, as embodying an ideal which may be kept in mind by the students of present day.

"It was a rigorous school of research to which we were admitted, and its discipline was such as only strong minds could stand. As I have already said elsewhere, Dixon's singularly clear and penetrative mind referred everything to the final test of a well-ordered experiment critically carried out without hurry or bias and with the results checked at every point. He impressed upon all the paramount importance of accuracy and truth, together with the highest standard of experimental proof step by step, by a process of exclusion, until it had been narrowed down to a single issue, which finally had to be tested in every possible way. We were taught also to criticise our results, to eschew all rash speculation, and to limit ourselves to such explanations as were proven or provable. Our theories were to be regarded merely as working hypotheses, no more than serviceable tools for accomplishing, further advances, and as such always to be subordinated to facts and discarded when outworn."

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Travancore Rubber Factory.—With a view to utilising the raw materials produced in the State, a rubber factory, equipped with modern tubing machines, hydraulic presses, braiding and hose making machines, vulcanisers, spreading machines, etc., has been started at Trivandrum. Messrs. Hermann Berstorff supplied the major portion of the plant and the detailed plan and estimate were prepared by Mr. John Helen, the State Rubber Expert and Engineer, who was formerly Rubber Expert to the Lakshmi Rubber Works, Karachi. The Rubber Factory is the first of its kind in India and is a pioneer enterprise started by the State. Travancore is the largest rubber producing tract in India including the Native States, with an area of 95,800 acres, under rubber, and accounts for more than 75 per cent. of the rubber of very good quality in South India. It has large deposits of very fine China clay, an essential ingredient for the manufacture of rubber goods and plenty of educated and skilled labour is also available.

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The 31st Half-Yearly Meeting of the Indian Central Cotton Committee.—The 31st Meeting of the Indian Central Cotton Committee commenced its session on the 19th of August in Bombay under the Presidentship of Diwan Bahadur Sir T. Vijayaraghavacharya, K.B.E., Vice-Chairman of the Imperial Council of Agricultural Research. In response to an invitation, His Excellency the Governor of Bombay was present. Among others present were the Hon'ble Khan Bahadur D. B. Cooper and the Hon'ble Diwan Bahadur S. T. Kambli.

In pursuance of the policy of encouraging long staple cotton in all tracts in India, suitable for it, the proposals of the Chief Agricultural Officer in Sind for the establishment of a compact block of long staple cotton of 300,000 acres in the Barrage areas of Sind by licensing of gins and presses, use of special marks in the licensed factories, seed supply organisation and organised marketing, had received the approval of the Committee at its August 1934 meeting. The Committee after a long discussion adopted a resolution urging the Local Government to translate their recommendations into action without delay and suggesting that the compact area be reserved for the growth (from specially selected government seed) of long staple cotton only, such as 289–F and N.T. and also that the Cotton Transport Act be introduced to prevent the importation of *kapas* from outside areas.

The first annual report of the Lancashire Indian Cotton Committee was considered by this Committee and it expressed its high appreciation of the efforts made by the Lancashire Committee to extend the use of cotton of Indian growth in Lancashire as described therein. The Indian Central Cotton Committee assures the Lancashire Committee of its desire to co-operate to the fullest extent possible in all matters affecting the interests of both bodies.

The Committee noted with satisfaction the Bombay Government's response to its representations for the elimination, by legislative action, of Goghari cotton in the Surat area, the spread of which in recent years has been a serious danger to 1027 A.L.F. The Local Government propose to introduce at an early session of the Council, a Cotton Control Bill on the lines of Madras Cotton Control Act, to prohibit the cultivation of Goghari cotton, its mixture with any other kind, its possession or its use for trading purposes.

The report of the Technological Research Sub-Committee was approved. It showed that a total number of 434 samples were received for tests during the period under review as against 311 during the corresponding period last year. The Committee recorded its appreciation of the valuable work of the Director of the Technological Laboratory, Matunga, whose informative brochure dealing with the work of the Laboratory for the last 11 years was considered and approved. This brochure will shortly be available to the general public.

The progress reports of 30 agricultural research schemes and 15 seed distribution schemes, all of them financed by the Indian Central Cotton Committee, were considered by the Committee and approved. The Jayawant and Gadag No. 1 Distribution and Extension Scheme was sanctioned for 5 years at an estimated expenditure of Rs. 2,66,772. A scheme for the introduction and extension of B.D. 8 cotton which is wilt resistant, in Broach District, was sanctioned for a period of 3 years at a total cost of Rs. 10,460. The Committee approved of the idea of calling a conference of scientific workers on cotton to be held in Bombay soon after the 1936 monsoon meeting of the Committee.

The Central Provinces Government doubted advisability of prohibiting the cultivation of Garrow Hill cotton which had detrimentally affected better types in the Central Provinces and Berar. They thought that the spread of such inferior cotton could be discouraged by penalising its mixing with cotton of superior varieties and decided to undertake legislative measures to penalise the sale of mixed cotton as pure. The Committee decided to request the Central Provinces Government to reconsider the question of prohibiting the growing of Garrow Hill cotton,

as in its opinion the action which the Local Government proposes to take will not prevent the spread of this inferior cotton. The known presence of even small areas of an inferior cotton tends to lower prices in the markets where this cotton is sold and the growers of better quality cotton also suffer.

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The Association of Economic Biologists, Coimbatore.—The Association of Economic Biologists which was founded five years ago, fulfils the supremely important function of bringing together the various specialists of the Coimbatore Agricultural Research Station for (1) taking stock of progress achieved in the different branches of Agricultural Science, and (2) discussions of research problems engaging the attention of the scientific officers of the station. Short notices of the activities of the Association have appeared in the columns of *Current Science* from time to time. The Proceedings of the Association issued annually reflects the activities of the Association. A brochure has recently been issued by the Association covering the period 1934–35. It comprises of six original papers and a number of highly informative lectures constituting an impressive record of the work of the Association.

H. B. S.

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Correlation between Laboratory Tests and Observed Temperatures in Large Dams.—His Majesty's Stationery Office (*Building Research Technical Paper No.* 18. Price 9*d.* net. Post Free 10*d.*)—A knowledge of the temperatures likely to be attained in large masses of concrete is of the greatest importance. The present paper shows, by comparing records made in three large dams now under construction with time-temperature curves obtained in the laboratory, that these temperatures may be predicted from data given by the adiabatic method of curing concrete. The method was described in Technical Paper No. 15. (Price 1*s.* 3*d.* Post Free 1*s.* 5*d.*)

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The Effect of Lighting on Efficiency Rough Work (Tile-Pressing).—His Majesty's Stationery Office (Price 4*d.* Post Free 5*d*).—The report describes experiments undertaken to find out the effect of increasing the illumination in the case of a perfectly simple operation (tile-pressing) for which good lighting was not previously considered necessary. The results show clearly the advantage to be gained by maintaining a reasonably good level of illumination.

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Van Nostrand's Chemical Annual.—Our attention has been drawn to the omission of the name of the Publishers in the bibliographical details relevant to the review of this highly useful handbook, containing useful data for analytical manufacturing and investigating chemists, chemical engineers and students, published in the July number of *Current Science* (Vol. IV, No. 1, p. 68). Messrs. Chapman & Hall, Ltd., 11, Henrietta Street, Covent Garden, London, W.C. 2, are the publishers of this important publication and they also act as agents for the book in the British Empire. The omission is regretted.

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We acknowledge with thanks the receipt of the following :—

"Journal of Agricultural Research," Vol. 50, Nos. 8–12, and Index to Vol. 49.

"Journal of Agriculture and Live-Stock in India," Index to Vol. III.

"The Journal of the Royal Society of Arts," Vol. LXXXIII, Nos. 4314–4317.

"Indian Journal of Agricultural Science," Vol. 5, Pts. II and III.

"Contributions from Boyce Thomson Institute," Vol. 7, No. 2, April—June 1935.

"Biochemical Journal," Vol. 29, No. 7, July 1935.

"The Journal of the Indian Botanical Society," Vol. 14, No. 2, June 1935.

"The Journal of the Institute of Brewing," Vol. XLI (Vol. XXXII, New Series), No. 8, August 1935.

"Canadian Journal of Research," Vol. 13, No. 1, July 1935, Sections A, B and C, and Index to Vol. XII, Jan.—June 1935.

"Chemical Age," Vol. 33, Nos. 839–842.

"Ceylon Journal of Science," Section B, Zoology and Geology, *Spolia Zeylanica*, Vol. 19, Part 2.

"Berichte der Deutschen Chemischen Gesellschaft," Vol. 68, No. 8.

"Indian Forester," Vol. LXI, No. 9, September 1935.

"Forschungen und Fortschritte," Vol. 11, Nos. 22 and 23/24.

"Marriage Hygiene," Vol. II, No. 1, August 1935.

Punjab Irrigation Research Institute, Research Publication No. 8, Vol. II, Nov. 1934: "Protection below Khanki Weir," by J. P. Gunn.

Punjab Irrigation Research Institute, Research Publication No. 9, Vol. II, January 1935: "Influence of an Upstream sheet pile on the Uplift Pressure on a Floor," by N. K. Bose.

University of California Publications in Agricultural Science, Vol. 6, No. 10: "The Chromosomes and Relationship of *Crepis Syriaca* (Borum)," by Donald Ross Cameron.

University of California Publications in Agricultural Science, Vol. 6, No. 11: "Chromosomes and Phylogeny in Crepis," by Ernest B. Babcock and Donald R. Cameron.

Government of India Publication, March 1935: "Monthly Statistics of the Production of Certain Selected Industries of India."

"Rothamsted Experimental Station, Report for 1934."

"The Geological, Mining and Metallurgical Society of India, 11th Annual Report for the Session 1934–1935."

Imperial Council of Agricultural Research, Scientific Monograph No. 5, "The Bombay Grasses," by E. Blatter and C. McCann: Illustrated by R. K. Bhide.

Imperial Council of Agricultural Research, Scientific Monograph No. 6, "Helminth Parasites of the Domesticated Animals in India," by G. D. Bhalerao.

"Report of the Zoological Survey of India for the years 1932 to 1935."

"Annual Report of the Imperial Council of Agricultural Research for the year 1933–34."

"Nature," Vol. 136, Nos. 3430–3433.

"The Journal of the Bombay Natural History," Vol. 38, No. 1.

"The Journal of Chemical Physics," Vol. 3, No. 8, August 1935.