

## The Industrial Outlook.

## Ceramics.

B. K. Ramprasad.

A FACTORY for the manufacture of porcelain insulators for electrical purposes and ordinary crockery on a small scale has been started by the Government of Mysore, in Bangalore. It is learnt that the first batch of insulators have been successfully fired and have passed the electrical and mechanical tests satisfactorily. The Hydro-Electric Department of the Mysore Government and the Department of Industries and Commerce have carefully surveyed the requirements of the local electrical supply schemes and others in Southern India and it is expected that the Factory will be able to meet the demands satisfactorily so far as insulators up to 13,000 volts are concerned. This is just the beginning, and much development and research work is to be done hereafter to utilize the local raw materials to the best advantage and also modify the processes accordingly. At present, an intermittent coal fired furnace is being used for the different stages in firing, but the utilization of electric heat by means of a suitable kiln will have to be adopted, as sufficient power at reasonable rates is available in Bangalore; and coal has to be imported either from Bengal or abroad.

Intensive research from the point of view of the physics and chemistry of Ceramics is to be carried out with the available raw materials in order to meet the rigorous demands of electrical porcelain: high voltage research on the porcelain products is also necessary to keep up the quality. It is lucky that the Factory is located near the Indian Institute of Science and it is hoped that the various problems of Ceramics in general and of the Porcelain Factory in particular will be taken up for investigation in these laboratories.

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USE of the new protective material known as "Thiokol" for electrical purposes has been taken up by the General Cable Corporation under a licensing agreement with Thiokol Corporation. Extensive tests over a two-year period have demonstrated that a jacket of proper Thiokol compound over rubber is superior to the rubber itself in resistance to chemical action, fatigue, sunlight, oil, vibration and corona. It also

has advantages as cable sheathing. Development work is already in progress to complete the adaptation of the new material to power cables, overhead conductors and secondary net-work conductors. It will also be employed for wire pertaining to general industrial uses where rubber is subjected to the deleterious influence of oil, acid, weather or light. The field at this time is limited to 600 volts. (*Electrical World*, July 16, 1932.)

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The latest of the contributions of electrically deposited metals to the advancement of industry is the use of chromium plated steel. Mill rolls, roller leveller rolls and cold finishing rolls are notable uses. In the case of the former it is possible to substitute ordinary forged steel (0.70 to 0.80% carbon) for tool steel and it is said that by having a well grounded finish on the roll before chrome plating, a much higher finish can be offered than with a tool steel roll. Because of the extreme hardness of chromium these plated leveller rolls remain in service over a long period of time often outlasting a tool steel roll for 4 to 6 regrinding periods. When the plated leveller rolls finally indicate some wearing through of the chromium plate, provided the underlying steel has not been marred, the plating can be stripped and again chromium plated without regrinding. The cost of such plating is said to be relatively inexpensive considering the initial cost of the rolls. (*Electrical World*, July 23, 1932.)

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An X-ray machine that can take snapshots and that will be able to photograph moving internal organs of the body has been developed and is now being tested by the New York Hospital—Cornell Medical Centre. It takes pictures about 20 times faster than the ordinary radiograph and will be able, because of the increased amount of light that can be used, to photograph clearly such soft tissues as incipient ulcers, ruptures of the muscles and cancerous growths. Research workers and technicians of the General Electrical Company worked in collaboration with Dr. John R. Carty, Radiologist of the New York Hospital and Associate Professor of Radiology at Cornell University Medical College, to perfect it. (*Electrical World*, July 23, 1932.)



### A New Process for Wood-Preservation.

[R. Falk and S. Kamesam, *Ind. Pat.*, 18580 of 1932.]

THE invention is based on the observation that when mixtures containing arsenic compounds and chromium salts in aqueous solutions are used for impregnating wood, neither of the two components get washed out within a certain range ( $\text{As}_2\text{O}_5 : \text{K}_2\text{Cr}_2\text{O}_7 = 1:1.25$  to  $1:1.75$ ) while at others either the arsenic or the chromium salt passes out quite readily. A preservative containing both within the optimum range is very efficient against wood-destroying fungi and insects and can be applied by injection in closed vessels or dipping in the open or painting with the solution. It can also be combined with other insecticides and fungicides or fire-proofing chemicals, provided the latter are present in small proportion, generally, less than 20 per cent.

### A Preservative for Fruits and other Organic Bodies.

[P. Worthington and H. C. Webb, *Ind. Pat.*, 18108 of 1932.]

THE invention relates to the application of monovalent alkali salts of ichthyosulphonic acid (chiefly the ammonium salt termed ichthyol), to the preservation of fruit, particularly those of the citrus type, apples and tomatoes. The preservative, which renders the fruit highly resistant to fungus attack is best applied by dipping, spraying or brushing after admixture with a suitable carrier like petroleum jelly, glycerin, gelatin or vegetable gum. It is stated that the preservative does not detract from the edibility of the fruit as it is not substantially absorbed in the human alimentary system.

## Science News.

SCIENTISTS in India will be gratified to read that Lt.-Col. R. B. Seymour Sewell, I.M.S., Director, Zoological Survey of India, has been requested to accept the post of Leader of an Oceanographical Expedition to the Arabian Sea. The Expedition is being sent out by the Cambridge University to investigate the area in the Arabian Sea from the Persian Gulf down to about the level of Madagascar and from east to west between India and Africa. The investigation will be specially carried out in reference to the zonation of the fauna on the continental slopes of the two sides between 50 and 1,000 fathoms, and the problem of the bottom deposits will also receive special attention. The Expedition will, as a result of its researches, be able to throw a definite light on the hypothetical Lemurian connection between Peninsular India and South Africa in the Palæozoic and earlier Mesozoic times.

The Muslim Association for the Advancement of Science was inaugurated at Aligarh in the early part of 1931, with the object of stimulating the spirit of original investigation amongst Mussalmans and of providing closer co-operation between Moslem scientists in different parts of India and elsewhere. The Association also undertakes the publication of *Proceedings*, somewhat on the lines of "*Chemical Reviews*", published by the American Chemical Society, containing summaries in specialized scientific fields by investigators who are engaged in active research work in these branches. The first volume of these *Proceedings*, which was published in December 1931, contained a long memoir by Professor R. F. Hunter on the work of his collaborators in the Thiazole Group during the last six or seven years.

The office-bearers of the Association are as follows: *President*, Nawab Masood Jung Bahadur, B.A., LL.D., *Vice-Chancellor* of the Muslim University; *Vice-Presidents*, Professors R. F. Hunter, D.Sc., Ph.D., D.I.C., and H. W. Blood Ryan, M.A., D.Sc., Ph.D., LL.D.; *Secretary*, Dr. M. Baber Mirza; *Council Members*, Drs. Syed Husain, A. A. Hyder, Rafique Ahmed, S. D. Muzaffer, S. Siddiqui, Professors Abdul Rahman Khan, R. Samuel and Mr. M. Haider Khan.

A few bronze medallions, struck by the South Indian Science Association, Bangalore, in commemoration of the Nobel Prize award to Sir C. V. Raman, are available from the Secretary at rupees two each.

Addressing the South Indian Science Association on the 19th August 1932, on "The Technique of Talkies", Dr. Lal C. Verman traced the development of the industry from the days of Edison's first crude attempt in 1913 to the modern talkie film. The essential principles of reproducing sound by the "sound on disc" and "sound on film" methods were described and the future lines of the development of this immensely popular and growing form of entertainment were outlined.

In a paper on "The Biological Values of Proteins from some Indian Food-stuffs", presented before the Society of Biological Chemists (India), on August 1932, Mr. N. Narayana explained the term Biological Value as defined by Thomas and later by Mitchell. After conducting experiments on rats with proteins from some ten Indian pulses, he found that their biological value varied from 57 to 78, while their digestibility varied from 58 to 83. *Cicer*