CURRENT SCIENCE—50 YEARS AGO

Vol. II FEBRUARY 1934 p. 312

Research in 1933.–Under the title "A Rip Van Winkle View of Ethics in 1933" (*The Chemical Age*, **29**, 589, 1933), Prof. H. E. Armstrong has expressed in his characteristic way his views on modern chemical research. The following extracts reproduced from the Professor's article may prove interesting to readers of *Current Science*:—

"The world, to-day, is a world of scientific discovery of overmastering importance; unfortunately, it is also predominantly, a world of advertisements to serve commercial ends. The condition I deplored 15 years ago has now grown intolerable. Scientific workers are openly serving two masters; they almost glory in riding with the hounds while running with the hare. Not only is the world, in general, in the throes of a merciless civil war of commercial competition; equally in the scientific world, ruthless civil war rages between individual workers. Each one for himself, the devil take the hindermost, is the prevailing doctrine in the struggle for place and purse; perhaps also to satisfy the artists' craving for praise and applause. No sooner is an idea started than harpies from everywhere pounce upon it.

"Last year, there was a competitive international rush to secure the rights of vitamin D, in which our state laboratory, under the direction of the Medical Research Council, won by a short neck: a six-man team was engaged upon the work. This year the appointed work of the Birmingham University laboratory has been interrupted, in order to solve a similar sensational problem, in connection with the supposed vitamin C; on this a whole crowd was engaged. Who held whose hand, who washed out which test tube, is not stated. When the expected prize is allotted, how is it to be apportioned? Will each of the workers be presented with a framed certificate (See *R. Soc. Arts Journal*, Dec. 8, p. 109) and a penny whistle, so adjusted that, when he proceeds to blow his trumpet, the squeak will be of proportionate loudness? Obviously the race was against time for priority. What must be the moral effect upon students of such methods of working, of such training?

"Four-fifths of the work that is published in the Journals may be set down as of slight account: no one considers it; it is too unfinished or too trivial in subject. We have in some way to collect the few grains of gold and scrap the rest. Titles must be shortened and made rational, many are too absurd. 'Scaffold Poles and *Mortar Moments*'—to a floppy mass of Mortar flung about without rhyme of reason, to no obvious end. The label 'Parts I to infinity' is meaningless attached to accounts which should never have had a beginning.

"All said and done, however, there is some gold to be found that glitters. Wisdom is coming from the plant and is passed on to ourselves. A mighty future may well be in store for chemistry. If worthily pursued, it may well be called upon to take charge of public well-being. We know that we ourselves live wholly bedrugged lives. Now we are learning that the plant is equally controlled—that cell growth in the young plantlet takes place under the influence of a definite growth agent termed *auxin*. Although this is present in most minute proportions, it has been isolated in the crystalline state. The composition of Auxin is $C_{18}H_{32}O_5$. The story is a veritable romance. The discovery is the work of the combined physiological and chemical forces of the Utrecht School, under Professors Went and Kogl. The proof is simple. When the tip of the young oat seedling (the coleoptile) is cut off, the shoot ceases to grow; growth re-commences when it is restored or even if the cut-off tip be placed, for a time, on a fragment of agar jelly and this fragment alone is placed upon the cut surface of the shoot. The agent is thus shown to be soluble. The amount present is perhaps one part in half a million of the plant material.

"Equally remarkable is the discovery in milk of *Lactoflavin*, referred to in *The Chemical Age* of December 16. Assuming this to be correctly represented as the B_2 advitant, the isolation of the substance from milk is of the greatest importance. There has been no public beating of drums over either discovery and

no general rush to do work of this character is noticeable. Yet it is the work of the future, for which real chemists must be specially and fully trained. The outstanding task of difficulty will be the precise determination, by competent chemists and physiologists working in unison, and animal activity effect their distinctive purposes. Chemistry may be said to be full of vitality, because its outlook is becoming increasingly vital: in this special connection, of ever-growing public importance."

ANNOUNCEMENTS

PRODUCTION OF TIN-BISMUTH FOIL

The International Tin Research Institute, has recently conducted trials in the production of tin-bismuth eutectic alloy in the form of continuous lengths of foil, of various thicknesses and widths. Good quality material has been produced by a process known as melt-spinning. In essence, this process involves the impingement of a molten stream of metal on to a copper wheel rotating at high speed. The metal solidifies extremely rapidly and is thrown off the wheel as a continuous ribbon. Cooling rates of 1 million degrees C per second are possible with this apparatus. Alloy structures and properties are greatly modified by this casting method and the Institute is studying a wide range of alloy systems.

Tin-bismuth is produced with an extremely fine grain size and enhanced ductility, although the greatest benefit may be that of simply producing foil without the need for costly and complicated rolling and heat treatment stages. One anticipated use for the foil is for the production of solder pre-forms. Tin-bismuth eutectic solder has the advantage of a low melting point, 130°C, compared to eutectic tin-lead, 183°C. This may be particularly advantageous when heat-sensitive components are to be soldered by a reflow technique such as vapour-phase soldering. The wetting properties of tin-bismuth are not significantly different from those of tin-lead even at the lower soldering temperature and their mechanical properties are, under some conditions, superior.

Further information can be had from: C. J. Evans, Head of the Development Department, International Tin Research Institute, Fraser Road, Perivale, Greenford, Middlesex, UB6 7AQ England.

ORGANOTINS IN WOOD PRESERVATIVES

The International Research Group on Wood Preservation recently held its 14th Annual Meeting in Queensland, Australia, and the series of papers that were concerned with organotin wood preservatives are summarised in 'Tin and its Uses' No. 138, together with some of the ensuring discussions. Also in 'Tin and its Uses' No. 138 is an account of the work of the Australian Tin Information Centre on its 10th Anniversary, a report on the European Pewter Union and a Pewter Craft Fair in the U.K. There is an account of studies of the use of tin (IV) oxide based catalysts, in CO_2 gas lasers, and also a feature on gypsy wipe tinners in the U.S.A. Further information can be had from: C. J. Evans, Head of Development Department, I.T.R.I. Fraser Road, Perivale, Greenford, Middlesex, UB6, 7AQ England.
