

HAZARDS FROM COSMETICS AND TOILET PREPARATIONS

A symposium on the prevention of hazards from chronic toxicity of cosmetics and toilet preparations, the sixth of a series organized by the European Committee on Chronic Toxicity Hazards ("Eurotox"), was held at the Chester Beatty Research Institute, London, from October 30 to November 2. The participants,* from ten different countries, approved unanimously the following report.

General Considerations

It was recognized that the use of cosmetics and toilet preparations could contribute to the protection of health and improvement of wellbeing of the population, sometimes indirectly; the indiscriminate use of certain ingredients in cosmetic preparations could nevertheless endanger public health. The decision was taken beforehand to consider chronic toxicity in general, but to exclude sensitization and allergy, which would form the subject of a future symposium.

In these studies it was agreed that close co-operation between toxicologists and specialists in cosmetic science was highly desirable in order to obtain information about the substances employed and the condition of their manufacture and use. The participants look forward to this co-operation with industry being strengthened and maintained. In this first meeting it was obviously impossible to enter into details or to examine all product and ingredient groups. This report should be considered as an approach to the subject. A more extensive account of the meeting will be published in the *Journal of the Society of Cosmetic Chemists*.

The effects of long-delayed toxicity are difficult to detect in man. Even if only a small proportion of the population is subject to such hazards, everything should be done to avoid them. An incidence of cancer, for example, in a proportion of the population much lower than that which could be assessed by present biological methods, including both epidemiological and experimental, could still be serious. Although no cases of cancer have been directly attributed to cosmetics, it is better to prevent disease from chronic toxicity than to find out its cause in 20 years' time.

Control of Constituents

Control over the constituents of cosmetic and toilet preparations is one way in which the exposure to substances having delayed toxic effects could be reduced. The problem of control of these preparations is similar to that of food in general, but different in details.† In the field of food additives the principle of positive lists of suitable products

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is generally accepted. In cosmetic and toilet preparations the ingredients could be classified as suggested for the colours by the Deutsche Forschungsgemeinschaft Farbstoff Kommission Mitteilung 3 as follows:

C.—Completely acceptable for use in any cosmetics, including those that are ingested (e.g., in lipstick or dental preparations).

C.Ext.—For external use only—not necessarily safe for ingestion.

W.R.—For use in washing and rinsing, or as a solvent or propellant, provided that the material has only transient application; not necessarily safe when ingested or remaining on the skin.

Classification should depend on the nature of the preparation and, more especially, its usage. The substances in class C which are completely acceptable should either be "generally recognized as safe" or have been approved after testing in at least two species of animal: for example, by feeding to rats over a period of two years and by skin application to mice for 80 weeks. Dogs may be useful for discovering toxic effects in short-term experiments, but appear to be unsuitable animals for the skin-testing of cosmetic ingredients, because dog skin is relatively impermeable or for life-span studies since they live for 15 years. Substances in the categories C.Ext. and W.R. may be controlled by negative lists. Products known to be harmful should not be allowed.

Substances already in use might be included in provisional positive lists, unless there is reasonable evidence that their use is harmful. As soon as possible the available information, including experience of human use, on these substances should be evaluated and further studies may be called for if the available information is not considered to be adequate to establish acceptability. A reasonable period of time, say five years, for the completion of further tests should be allowed. The evidence on the biological properties of new ingredients proposed for use in cosmetics should be evaluated and inclusion of the substances in appropriate lists should be decided accordingly.

Substances used in cosmetics should conform to appropriate specifications and standards of purity. Standards acceptable for food additives or pharmacopoeial preparations can be regarded as acceptable for cosmetic materials, although in some cases less stringent, although specifications may be justified.

Cosmetics present special problems of hygiene and health protection because of their frequent use (often daily), without any scientific or medical supervision. The possible hazards should not be considered in isolation but rather in conjunction with other risks, such as those of food additives and contaminants of air and water.

Resolutions

1.—The ingredients of cosmetic and toilet preparations, both in the pure state and as formulated, should be subjected to biological testing to ensure, so far as possible, that the use of such preparations would not constitute a hazard to health.

2.—Appropriate control measures are therefore necessary. The nature of these must depend on the particular ingredients in the cosmetic preparation, the uses to which it is put, and the population groups involved.

3.—In general, effective control can be promoted by the compilation of lists of substances that are considered to be either suitable (positive list) or unsuitable (negative list) for use in cosmetics.

4.—A positive list and/or negative list, whichever is most appropriate for the group of substances under consideration, should be compiled, after consideration of the available evidence, along the lines indicated in this report for the ingredients used or proposed for use in cosmetic preparations.

5.—Special measures, such as limitation of concentration used, specified conditions of use and/or labelling regulations,

†The evaluation of the toxic and carcinogenic hazards of food additives is considered in the second and fifth reports of the joint F.A.O./W.H.O. Committee on Food Additives (1958 and 1961). See also *Brit. med. J.*, 1961, 2, 1411.

are needed for some substances that may cause unwanted side-effects.

6.—Substances that may be used for specific therapeutic purposes should, in general, be under medical control; the uncontrolled use of potent therapeutic agents, such as antibiotics and hormones, is undesirable.

7.—Adequate specifications and standards of purity of ingredients used in the formulation of cosmetic preparations, especially vehicles, solvents, and colours, are necessary to ensure the exclusion of harmful impurities.

8.—The plan of biological testing for each substance or group of substances should be decided by the responsible

scientific investigator: nevertheless, some guiding principles as set out in this report that take account of the uses to which the cosmetic will be put should be considered.

9.—Cosmetic preparations, in general, are intended for adults, but there are some special preparations for children. Preparations for adults may also be used by children either accidentally or intentionally. Infants and children must be given special protection against toxic hazards.

10.—The possibility should be explored of establishing more effective human epidemiological studies in the field of chronic toxicity hazards that may attend the use of cosmetics.

Nova et Vetera

THE TRAVELLER LOOKS BOTH WAYS*

BY

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To-day, on the 112th anniversary of his birth, we still think of Sir William Osler as a living force, 42 years after his death. A many-sided man, he was ever a traveller, and no armchair scholar. Montreal, Philadelphia, Baltimore, and Oxford were his homes in fairly rapid succession. He lived during a period of much significance for medicine; he saw the end of the Victorian Age and the beginning of the astounding changes in medical outlook which still surprise us.

Like the Roman god of doorways, Janus, from whom the first month of the year takes its name, he looked both backward and forward, a double outlook essential to everyone using a door.

Osler was the very personification of Janus. None knew better than he that one's range of observation should be wide, and that too close a concentration on the present had its disadvantages. In time, past, present, and future, and in space, the entire universe, were the fields of his activities. There have been many other medical Januses, looking both fore and aft, living in times of change and travelling from place to place. I should like to draw your attention to a few of them in this talk which I have entitled "The Traveller Looks Both Ways." There is a wide variety to choose from—Hippocrates and Galen, Vesalius and Paré, Paracelsus, Harvey, and many others—but I have selected three early travellers—Andrew Boorde, Jerome Cardan, and Pieter Camper—as worthy of our attention, though they are not among the most prominent figures in medical history. Boorde was the only Englishman of the trio. Cardan was Italian and Camper was Dutch.

Boorde and his "Breviary"

Andrew Boorde, sometimes written Borde or Bored (indeed, he used to call himself Andreas Perforatus), was born in 1490 at Cuckfield, in Sussex, where a house still bears his name. At an early age he became a Carthusian monk, but finding the discipline too irksome he wrote to his superior stating that he was "not able to byde the rigourosity" of such a religion, and begging to be relieved of his vows.

What the answer was we do not know, but he continued to sign himself "Andrew Boorde, Priest," and he went back to live at Charterhouse on his return from Montpellier, where he studied medicine for a year. At this stage he had the good fortune to attend the Duke of Norfolk, whose nieces Katharine Howard and Anne Boleyn became, in turn, Queens of England. This

*An abbreviated version of the Oslerian Oration, delivered to the Osler Club of London on July 12, 1961.

gained for him the friendship of Thomas Cromwell, who employed him more than once as an ambassador, or, rather, as a spy, in the course of his Continental wanderings.

Indeed, it was from his reports to Secretary Cromwell that we derive such knowledge as is available regarding Andrew Boorde's travels. His desire to see the world was strong, and he was, for a time, at the University of Orleans.

When crossing the bridge there one day he fell in with a party of nine English and Scottish pilgrims who were making their way to St. James' of Compostella in Spain. He told them that they would be better to die in England, saying that he would rather go five times to Rome than once to Compostella. They remained unconvinced, however, and he resolved to go with them. After great privations they reached their destination, but during the return journey they all died, one by one, the result of eating fruit and drinking water. Boorde, who had been more abstemious, found himself the sole survivor, and when he reached France he "did kiss the ground for joy."

Hardly had he set foot in England than he was off again, this time to ascertain for Cromwell the Continental opinion regarding the matrimonial affairs of King Henry VIII. It did not take him long to report that the King had few friends across the Channel. Our next news of Boorde is contained in a letter from Leith, Scotland, on April 1, 1536. He writes, "I am now in Scotland and at a little town named Glasco, where I study, and practise physick for the sustentation of my living."

Boorde had a poor opinion of the Scots; he regarded them as thieves and liars. "I, being there, was hated, but my physick did keep me in favour, and I did learn their secrets."

Although the University of Glasgow had been founded in 1451, there was no organized teaching of medicine, and Boorde's knowledge probably supplied a need, while in return he gained useful information which he transmitted to England.

After the Scottish tour he made yet another Continental journey which took him as far north as Denmark and as far east as Jerusalem. He then settled down for a time, about 1542, to write, at Montpellier, the books which are his chief memorial.

Of his later life there is no clear record. He practised at Winchester, and was at first highly regarded. Later he fell from grace, and, whether justly or unjustly