This should not cause much difficulty in practice, since a similar situation would arise when the same substance occurred in an unknown, and as soon as the unsatisfactory nature of one or more of the stronger bands was realized, less intense but better defined bands would be employed. Unsatisfactory bands not used for obtaining the classification number could be bracketed to distinguish them. As already mentioned, when the intensity of bands is less than 20 per cent, the frequencies would be underlined. If a band is superimposed on a continuous background of absorption, allowance should be made for this when assessing the band intensity. The simplest procedure is to take the height of a peak above any part of the immediate background free from distinct bands. Both the above-mentioned points are illustrated by the following imaginary entry :

No. of spectrum	Molecular formula	Absorption frequencies
——	——	(930), (1,387), 802, 997, 1,284, 705

The classification number would now be 16/35.

If the spectrum of the unknown has its strongest bands at, say, 801 cm.$^{-1}$ and 1,239 cm.$^{-1}$, besides looking up the cards corresponding to 800–809 and 1,230–1,239, that is, 16/59, it would be wise to look up also the classifications 15/60, 16/60 and 15/59, in case small errors have occurred in the measurement of these key frequencies.

Costs

The cost of the project as outlined, apart from the initial cost of equipment and cost of the organic substances themselves, might be expected to amount to possibly £20,000 per annum to keep ten spectrometers working continuously and to cover the cost of printing data cards. This works out at about £1 per spectrum produced for an annual output of 20,000 spectra. The cards of data could be brought up to date and redistributed as necessary each year. Each laboratory possessing an infra-red spectrometer and wishing to make use of the service would take the complete set of data cards issued each year. It is reasonable to suppose that in time at least a hundred laboratories in Great Britain alone would require the cards of data, so that an annual charge of £200 would make the project self-supporting. After only one or two years, the value of the service should be well worth this sum.

[1] Lord McGowan, "One Hundred Years of Chemistry" (Royal Institute of Chemistry : Lectures, Monographs and Reports 1951, No. 3). 3*s*. net.

COSMETICS AND DERMATITIS

At a recent meeting of the Society of Cosmetic Chemists of Great Britain, held at the St. Bride's Institute, London, a lecture on "Cosmetics and Dermatitis" was given by Dr. E. J. Moynahan, consulting dermatologist to Guy's Hospital.

Referring briefly to the history of cosmetics, Dr. Moynahan mentioned the fact that several different types of cosmetic are described in the Ebers Papyrus, and that many references to such preparations are to be found in the works of the alchemists and early herbalists. The empirical approach has continued to dominate cosmetic art and practice, however, until comparatively recent times. A noteworthy contribution to scientific study has been made by Sulzberger and others, who have begun to segregate and classify the various causes of dermatitis.

Very few primary irritants are used in modern cosmetics. Those that are found include permanent-waving reagents, which attack the keratin chemically and break down disulphide linkages ; depilatories of closely related type ; high concentrations of alkali ; and oxidation hair-dyes such as *para*-phenylenediamine. Most of the relatively few cases of dermatitis provoked by cosmetic materials are due to sensitization.

Dr. Moynahan referred to the considerable protection provided by the skin's horny layer (if intact) and its supernatant layer of sebum against the majority of external agents, with the exception of such keratolytics as strong alkalis and acids. Dermatitis, which occurs in the lower rather than keratinous layers—that is, in the living cells—varies from redness and itching to swelling, vesicle formation and finally to necrosis. Oils and predominantly oily emulsions, owing to their ability to penetrate through the lipoids of the skin, are more likely to favour the onset of dermatitis than are aqueous solutions and mainly aqueous emulsions, although factors other than the constitution of the vehicle have also to be considered. High proportions of wetting agents may lead, for example, to an undesirable concentration of active agents below the prickle cell level.

In discussing typical cases of sensitization, Dr. Moynahan pointed out that primary irritants may in turn become sensitizers. With a few notable exceptions, such as the azo dyes and amine intermediate dyes, sensitizers are unfortunately difficult to classify in chemical groups, owing to the lack of exact knowledge of the response mechanisms of the skin. It is not always easy, therefore, to predict from chemical data the tendency to irritate the skin of newly introduced chemicals. Skilfully conducted patch tests are valuable ; but, however carefully chosen be the concentration of product, size of patch and site of application, such tests have their limitations.

In a general review of cosmetics as causes of dermatitis, Dr. Moynahan said that occupational dermatitis, due to the handling of cosmetics, is comparatively rare. This may be partly attributable to the employment of automatic methods for mixing, filling and so forth. Face creams rarely give trouble except when irritant perfume materials have been incorporated in them. The same observations apply to face powders. Permanent-waving reagents give the most trouble, followed by hair dyes. Allergic dermatitis provoked by hair dyes is dramatic in character but in most cases easy to treat. In cases of lipstick dermatitis there is usually a history of exposure to ultra-violet light ; indelible dyes such as eosin are photosensitizers (as is also bergamot oil, used in eau-de-Cologne, etc.). All brands of lipstick tend to give the same reaction in such cases of idiosyncrasy. Nail-lacquer dermatitis occurs mostly on the thinly keratinized skin around the eyes and on the chin or cheek ; not on the fingers themselves. Several of the constituents of plastics have been known to act as sensitizers. A cause of nail brittleness which is more common than nail varnish solvents is the injudicious use of some of the newer detergents. Most of the anionic detergents used in cosmetics are satisfactory in the proportions normally employed : more trouble has been caused by other detergents and wetting agents used in the washing and treatment of fabrics. Rouge is virtually innocuous in character. As the keratin of hair is tougher than that of the

skin, it would appear that depilatories are bound to affect the skin keratin. For the purpose of depilation, Dr. Moynahan said that he prefers the method of electrolysis, although this method is impracticable for axillary hair removal in women. After briefly referring to cases of oil dermatitis caused by the use of 'brilliantines', he interpolated some comments on keratoplastics and then referred to the merits and defects of barrier (protective) creams. His concluding remarks dealt with the indiscriminate use of disinfectants, which can easily intensify skin irritation, and with the potential dermatitis-provoking action of highly rosined soaps.

COPENHAGEN BIOLOGICAL CONFERENCE

RECENT developments and present trends in cellular biology, physiology and chemistry formed the subject of a joint Danish–British conference held during April 30–May 2 at the Danmarks Farmaceutiske Hojskole in Copenhagen. At the invitation of Danish biologists and the University of Copenhagen, a group of research workers from Great Britain as well as several Danish scientific workers reported on the progress of their own researches, dealing with a variety of topics, which were chiefly, though not exclusively, concerned with the correlation of cell composition with specific cell functions such as growth, division and survival.

The opening session, at which the chair was taken by Dr. A. F. Hughes, began with Prof. H. G. Callan's account of his studies on the amphibian oocyte nuclei; he was followed by Dr. W. S. Bullough, who spoke on the effect of œstrogenic hormones on carbohydrate metabolism and mitosis in mouse ear epidermis; and Dr. M. Webb on the influence of certain extraneous agents, chiefly magnesium, on cell division in bacterial cultures. Dr. F. Buchthal presided at the next session, which was devoted to papers by Dr. J. M. Mitchison, on the mechanical properties of the cell surface, particularly in relation to cleavage; Dr. E. Zeuthen on nuclear growth and respiration in dividing marine eggs, in the light of his recent experiments with the refined Cartesian diver technique; and Dr. C. Waymouth on the problems of maintenance and growth of tissues *in vitro*, in a variety of media of chemically defined composition.

The chair at the next day's meeting was taken by Dr. G. H. Bourne and Prof. P. Brandt Rehberg. The proceedings were opened by Drs. E. C. Slater and K. W. Cleland, who discussed the respiratory and phosphorylative ability of heart muscle sarcosomes. Dr. S. R. Pelc and Dr. A. Howard followed with a communication on the effects of X-rays and neutrons on the synthesis of deoxyribonucleic acid in plant roots; Dr. H. Holter surveyed critically the existing methods by means of which different parts of the cell can be separated mechanically and used for studies on the localization of enzymes in the cytoplasm; Dr. R. Brown described the enzymatic changes which occur in the plant cell during growth. A much appreciated contribution was made by Prof. K. Linderstrøm-Lang, who analysed in a detailed manner the phenomena of diffusion and precipitation in Gomori's histochemical test for phosphatase. Dr. E. Hoff-Jørgensen spoke on the deoxyribonucleic acid content of some bacteria in relation to requirements for vitamin B_{12}.

Prof. J. N. Davidson took the chair on the last day of the meeting. Dr. H. Kalckar described recent experiments in which he used radioactive phosphorus for the demonstration of a pyrophosphorolysis of uridinediphosphoglucose to uridinetriphosphate and glucose-1-phosphate; Dr. R. Markham reported on some new structural characteristics of nucleic acids as revealed by the combined application of enzymic and chromatographic methods; Dr. J. A. V. Butler then spoke on the action of radiomimetic substances on nucleic acid; and Dr. C. Lutwak-Mann on the behaviour of nucleic acid in blood-forming tissues with special reference to X-ray injury.

The contributions were followed by stimulating comments and discussion, notably by Prof. C. H. Waddington, Drs. J. Ebling, J. A. Kitching, R. K. Morton and others. In conjunction with the conference three evening lectures were given. Dr. D. J. Bell reviewed the subject of "Transglycosidation: a Natural Method of Stored-energy Transfer" before the Danish Chemical Society; Dr. T. Mann spoke on "Sperm Survival and its Dependence on Metabolic Processes" to the Danish Biological Society; and Prof. J. Z. Young on "Experiments on Learning in the Octopus" to the Natural History Society.

The British party, who enjoyed initially the support of Dr. M. Swann and later of their efficient secretary, Dr. W. S. Bullough, were most cordially received and entertained by their Danish colleagues. Prof. H. V. Brønsted, Dr. H. Holter, Dr. H. Kalckar, Prof. K. Linderstrøm-Lang and Dr. E. Zeuthen spared no effort to assure for the conference the maximum of scientific and social success. A banquet at the ancient Munkekaelderen was honoured by the presence of the rector of the University of Copenhagen, Prof. H. M. Hansen.

INTERNATIONAL UNION OF BIOLOGICAL SCIENCES

MEETING OF THE EXECUTIVE COMMITTEE

THE executive committee of the International Union of Biological Sciences met in London in the rooms of the Royal Society during March 4–5. This meeting was midway between the last General Assembly of the Union at Stockholm in 1950 and the next one to be held in the summer of 1953. Thirty members of the executive committee, from eight countries, were present, representing the nine Sections of the Union, namely, those of Biometry, Botany, Experimental Cytology, Embryology, Entomology, Genetics, Limnology, Microbiology and Zoology. Some of these Sections are identified with international bodies; thus the Section of Biometry is constituted by the Biometrical Society, the Section of Experimental Cytology by the Society of Cell Biology, the Section of Microbiology by the International Association of Microbiologists, and the Sub-Section of Zoological Nomenclature by the International Commission on Zoological Nomenclature. The executive committee expressed the desire that all Sections of the Union, some of which are already affiliated to the permanent committees of International Congresses, should as far as possible be identified with international organizations having