on the risks of future children being affected the specific genetic syndromes should first be considered. The recurrence risk will be that for the syndrome. In cases due to progestin or sex chromosome anomalies the risk for future offspring will usually be small. For the rest, the empirical risk for later brothers of patients born to unaffected fathers may be taken to be about 10%.

[1] Sørensen, H. R., *Hypospadias with Special Reference to Aetiology.* Copenhagen, Munksgaard, 1953.
[2] Lamy, M., Lecture read at the University Institute of Human Genetics, Copenhagen, 18 April 1952.
[3] Aarskog, D., *Acta Paediatrica Scandinavica*, 1970, Supplement 203.
[4] Chen, Y. C., and Woolley, P. V., *Journal of Medical Genetics*, 1971, 8, 153.

Tests on the Pill for Carcinogenicity

This week the Committee on Safety of Medicines published its long-awaited report on the tests of various oral contraceptives for carcinogenicity in rats and mice.[1] Taken at their face value the conclusions drawn by the committee are reassuring. Each oral contraceptive preparation was tested on male and female animals of both species at three dose levels—a low dose (2-5 times the human contraceptive dose), a medium dose (50-150 times), and a high dose (200-400 times the human contraceptive dose). The experiments on mice lasted 80 weeks and those on rats two years. Animals exposed to medium and high doses of many of the compounds developed more pituitary (rats and mice) and mammary tumours (rats only) than controls and animals receiving low doses, but this was only to be expected in view of the known effects of high doses of oestrogens on the risk of the development by susceptible strains of rats and mice of neoplasms of these types. An earlier report to the committee by G. Bonser had suggested that dosage with mestranol was associated with the development of liver damage, nodular hyperplasia, and hepatomas in rats. The studies now reported are regarded by the committee as not supporting her findings.

The main conclusion is that "although a carcinogenic effect can be produced when some of the preparations are used in high doses throughout the life-span in certain strains of rat and mouse, this evidence cannot be interpreted as constituting a carcinogenic hazard to women when these preparations are used as oral contraceptives." On the other hand the committee proposes to review the situation when the results of long-term studies on primates and beagle bitches, now in progress in the United States, become available. In the meantime it recommends careful monitoring of cancer incidence in women taking oral contraceptives and "careful documentation, investigation and follow-up of all cases of amenorrhoea following hormonal contraception" in view of the effects on the pituitary gland shown by the rat and mouse experiments.

It is interesting to compare the reaction of this committee with that of the Food and Drug Administration in the United States, which has recently banned DDT on the grounds that it increases the risk of liver tumours in mice.[2] In the oral contraceptive studies male rats showed a pronounced, dose-related, increased risk of developing liver tumours in response to norethynodrel alone or together with mestranol 66:1 or to norethisterone alone or with mestranol. Megestrol acetate in combination with ethinyloestradiol and ethinyloestradiol alone increased the incidence of liver tumours in both male and female rats. Despite these findings the committee states boldy. "The extensive tests here reported do not support the previous work showing liver damage progressing to nodular hyperplasia and an increased incidence of hepatomas from prolonged administration of oral contraceptive preparations to rats." This is, strictly speaking, true insofar as no liver damage was encountered, but the statement sweeps a lot of liver tumours under the carpet.

The report is a masterpiece of brevity, compressing the findings of studies on over 13,000 animals into 15 pages and 7 tables, but the experimentalist used to scrutinizing data from long-term animal studies will note that some important information is missing. For example, the report states: "In some instances the high doses of the compounds led to premature death of the animals, either from general toxicity or from certain tumours. As a result, the incidence of other tumours may have been reduced. This needs to be borne in mind when assessing tumour yield." The last sentence is very true, but the reader of the report is left with a problem on his mind because data on early deaths are not given. Another important omission is any information on whether treatment of female animals with the compounds was associated with suppression of ovulation. If not, can there be any assurance that exposure reproduced the hormonal state of women taking the "pill"? If the risk of cancer is altered in either direction in women on the pill, the change in risk is likely to be attributable to interference with the delicate feedback mechanisms which control menstruation and ovulation. Massive exposure to hormones of species in which the control mechanisms are basically different is a priori unlikely to provide interpretable results.

Readers unfamiliar with laboratory rats and mice may well be surprised at the high incidences of some types of neoplasms found in untreated control animals. The tables in the report show incidences of 25% of lung tumours and 17% of liver tumours in control mice and 26% adrenal tumours, 30% pituitary tumours, and 99% mammary tumours in control rats. It is difficult to see how experiments on strains of animals so exceedingly liable to develop tumours of these various kinds can throw useful light on the carcinogenicity of any compound for man. Indeed the value of the mouse as a species for carcinogenicity testing has recently been seriously questioned because of a high incidence of tumours in untreated controls.[3]

Many people who feel oppressed by the increasing threat of world overpopulation would desperately like the "pill" to be found safe from the point of view of cancer. The studies now reported neither incriminate oral contraceptives as carcinogens nor exonerate them. We shall simply have to wait and see what the epidemiologists learn from prospective studies.

[1] Committee on Safety of Medicines, *Carcinogenicity Tests of Oral Contraceptives*, London, H.M.S.O., 1972.
[2] *Nature*, 1972, **237**, 420 and 422.
[3] Grasso, P., and Crampton, R. F., 1972, *Fod and Cosmetics Toxicology*, **10**, 418.

W.H.O. in Europe

From its new building in Copenhagen the Regional Office for Europe of the World Health Organization is directing research, organizing measures to improve public health, and helping with educational schemes in the countries it covers.

Some of the infectious diseases that were the prime concern of the W.H.O. in its early days after the second world war have yielded to the attack made on them, but smallpox stands out as capable of springing some nasty surprises, as we have seen in Britain from time to time. Earlier this year, as the latest annual report from the Regional Office recalls,[1] it struck in Yugoslavia, causing no fewer than 175 cases and 33 deaths in the first outbreak that country had experienced for 42 years. The infection was brought in by a pilgrim returning from Iraq, where he had visited a number of holy places.[2] Only one case outside the country followed from this outbreak—namely, in West Germany.

A more insidious threat comes from cholera. After 50 years of freedom from the disease it has again, in the words of the report, "implanted itself" in Europe. Three cases were recorded in Britain in 1971 as a result of infection in Spain, and the El Tor biotype has gained such a firm even though small hold on Europe that further cases can only be expected. Certainly it is a disease to be taken seriously,[3] for symptomless excreters can spread it as they can typhoid fever, and early diagnosis and treatment are all-important for cure. The other fast-increasing infectious disease, gonorrhoea, is also of concern to the W.H.O., and representatives from European countries have met to exchange information on control measures.

The W.H.O. now also sponsors or co-ordinates research into many non-communicable diseases which at the same time can be aptly described as epidemic, and most prominent among these is coronary artery disease. About a million people are estimated to have died of it in the year covered by the report. Individual countries, including Great Britain, are financing research into this disease and its companion disorders. The role of the W.H.O. is to help the national centres plan their research programmes without duplication of work and with some conjunction of aim. 1971 was the first year of full-scale study, and by the end of it information on more than 9,000 cases of myocardial infarction had been collected. This study is continuing. Complementary to it is W.H.O.'s work on the care of patients before, during, and after ischaemic heart attacks. As well as advising on research projects it has sent experts to a number of countries to help in the establishment of coronary care units.

Among W.H.O.'s many other projects it has held meetings on water pollution, air pollution, the work of laboratory services, and the disposal of waste. It sees its role increasingly as helping the co-ordination of health policies at national level, and it is evident from the support it continues to receive that its work is invaluable to many individual institutions as well as more broadly to the public health of the countries themselves.

[1] World Health Organization, Regional Office for Europe, *Report of the Regional Director July 1971 to June 1972*. Copenhagan, W.H.O., 1972.
[2] Dorolle, P, *Lancet*, 1972, **2**, 525.
[3] *British Medical Journal*, 1972, **2**, 62.

New Thoughts on Nursing

It is just over 50 years since nurses obtained professional recognition through State registration, and during this half century of vast social change, world war, and technical advance in medicine an increasingly complex suprastructure has been erected on this qualification. Many circumstances now combine to make a radical revision of the nursing situation acceptable. Problems of recruitment, wastage, education, and staffing are widespread. Application of the Salmon Report has not always been painless. Morale is low in some sectors. The Seebohm Report has had its side effects for the community nurses, and the projected reorganization of the Health Service in 1974 will be an instrument of change. Now that the Briggs Report[1] is at last available, nurses can consider their problems as a whole and begin to work and plan for the future.

The Committee on Nursing, whose appointment was announced by the Secretary of State for Social Services (then Mr. R. Crossman) on 2 March 1970, recommends that the functions of the General Nursing Council and the Central Midwives Board should be merged in a new Central Nursing and Midwifery Council, with the midwives' interests specially represented by a standing committee of the new council. There would be three nursing and midwifery education boards for England, Wales, and Scotland, and area committees for nursing and midwifery education would be formed under each board. Nurse-midwife education would remain under the aegis of the Department of Health and Social Services, despite some pressure to have them transferred to the education departments. It was felt that students would be better off financially if they were not in receipt of grants, that the manpower studies necessary to control student intake would have to be done by the Health Departments, and that there is a need to co-ordinate health and social policy.

The age of entry to training, it is thought, should be reduced to 17½ in 1973, and to 17 in 1975. Students will enrol in colleges of nursing and midwifery. The Report envisages 200-300 such colleges, which would mean the eventual disappearance or amalgamation of many nurse-training schools. Each college would have a principal, with a staff of senior lecturers, lecturers, and clinical tutors, and the principle would be free to employ non-nurses as teachers. Tutors in the colleges would be independent of the service structure of hospitals, and the principal would be responsible through a governing body to the area education committee.

Students should no longer be considered as part of the labour force of the hospitals in which they obtain clinical experiences. There would be for all entrants one basic course of 18 months, leading to the certificate of nursing practice. This course would consist of "modules" of combined clinical and theoretical experience in general and psychiatric nursing of all age groups in hospital and in the community. The certificate would be taken by prospective midwives as well as nursing students. Suitability is not to be determined only by possession of O-level passes, and students will possess a wide range of intelligence, "from average to the highest." No uncertificated student will be left in charge of a ward at night.

Those who wish to go on may take a second 18-months course, leading to State registration. This can be followed by higher certificates in various nursing specialties. Able students may include study for a higher certificate in their registration course. The roll of nurses will disappear, and the register will include all trained nurses, so that the present separate registers for general, paediatric, psychiatric, and mental handicap specialists will be abolished.

All midwives will be nurses. Those on the register may take a 12-months course leading to registration as a midwife and the award of a higher certificate, while those with only the certificate of nursing practice will take an 18-months