particularly as expressed by Soviet and other scientists from the Soviet Union and from Eastern Europe, was the applicability of microbiological discoveries to industry and agriculture. Several sessions were concerned with applied aspects; and discussions of the automatic control of microbiological processes, and of the engineering equipment required, attracted much attention. Developments in this area of microbiology in the next few years will be rapid and far-reaching. The fuller exploitation of micro-organisms in the production of vaccines, antibiotics and a vast array of organic materials, as well as the problem of producing more food, are of the greatest importance. It was clear from the views expressed in Moscow that the increasing contributions of industries based on microbiology hold promise for the future.

Important information on the complex interactions between microbes and their hosts is coming from what is called gnotobiology — investigation with organisms free from germs or specifically inoculated. These are uniquely useful in the study of physiological processes and diseases in the absence of a microbial vector. With the advent of commercially available animals free from germs, and the isolator chambers for keeping them like that, gnotobiology is advancing rapidly. Included in the programme at Moscow was the use of germ-free techniques in the care of patients, which can be critical for those with impaired immunity mechanisms, as well as in containing contagious diseases in hospitals.

The gnotobiotic implications of space travel were also discussed. During long space flights there may be a high probability of a lethal simplification of the gut flora and the cross-contamination of pathogens. This less publicized problem of space exploration is of great practical significance to the technologist.

Apart from presenting a comprehensive report of the contemporary scene, an international meeting of this nature must also look to the future. To a gratifying extent the organizers of the Moscow congress were successful in establishing this balance which, considering the great diversity of subject matter embraced by microbiology, was no small achievement.

Population Excursions

THE birth rate is still falling steadily in Britain, according to the provisional figures for the June quarter recently issued by the Registrar General; it is estimated that there were 215,000 live births during the quarter, giving a rate of 17·9 per thousand population compared with rates of 18·5 and 19·2 for the corresponding quarters of 1964 and 1965. At the same time, the infant mortality rate has remained low—18·2 per thousand live births is estimated for the second quarter, versus the 1965 average of 19 per thousand. Only Sweden and the Netherlands have appreciably lower rates, while the United States averaged 25 deaths per thousand live births in 1965.

The birth rate may be falling but it is still well above the mortality rate; the Registrar General's Quarterly Return for the March quarter of 1966 reports that there were 862,290 live births in 1965 and only 549,379 deaths, of which 24,254 were from violent causes. The most prolific killer is still coronary and arteriosclerotic heart disease; it accounted for more than a fifth of all deaths in 1965 and at 113,451 is the highest number recorded. In the past 10 years, deaths from this cause have increased by 50 per cent. However, the number of deaths from myocardial degeneration has been steadily declining and reached a record low last year of 38,267. The other three main causes of death were pneumonia, bronchitis and stroke—the first two accounted for 60,595 deaths, and the latter for 78,149. Compared with these figures, the number of violent deaths seems quite small and is the lowest figure in 3 years; accidents involving motor vehicles caused 7,515 deaths, which is an increase in the past 2 years. The most publicized causes of all—murder and war—were responsible for only 317 deaths.

For the future, the Registrar General estimates that the population of the United Kingdom will have increased by 7·0 million by 1981, and that nearly all this increase will have occurred in England. The largest growth is expected to be in East Anglia, the Midlands and south-west England, with percentage increases of 30, 20 and 17 respectively; south-east England, at present containing 35·5 per cent of the English population, is expected to grow at only 12 per cent over the period, or less quickly than the national average.

Respiration Physiology

DR. PHILIP HUGH-JONES writes: The scientific publication explosion is becoming a threat to the assimilation of knowledge almost as alarming as the population explosion to the assimilation of food. So it is now no longer possible to welcome a new journal, as it was a few decades ago, without first assessing the need for its existence. The first number of *Respiration Physiology* has just been published this year with an eminent international editorial board and two distinguished physiologists as editors—Pierre Dejours of Paris as the day-to-day editor and Wallace Fenn of Rochester New York as honorary editor. Is there need for such a journal?

It is interesting to reflect on where articles about respiratory physiology, published in English, have hitherto appeared. In Britain the obvious place has been the *Journal of Physiology*, but with the outstanding success and interest in neuro-muscular physiology in Britain during the past decades, the proportion of articles in that journal about the physiology of respiration has declined. Thus a rough analysis of the contents of the *Journal of Physiology* for 1925 compared with 1965 showed the following percentages: in 1925, neuro-muscular articles 22 per cent, cardio-respiratory 28 per cent, endocrine 28 per cent, other 22 per cent, compared with 1965, neuro-muscular 53 per cent, cardio-respiratory 13 per cent, endocrine 15 per cent, other 19 per cent. During the period the total size of the journal increased from 46 articles to 201; the number of neuro-muscular articles increased from 10 to 106 while those on cardio-respiratory subjects increased only from 13 to 26.

It might seem that in Britain interest has shifted away from human and mammalian respiratory physiology (so ably pioneered here by Haldane, Barcroft, Hill and others) towards neuro-physiology after the success of Sherington, Adrian, and others who have followed the Oxford and Cambridge Schools. In fact, with the decline in interest in respiration among British physiologists there has been a marked increase