America's numerous centres of clinical research it was interesting to see that, although it is only three months since the A.M.A. meeting, a large proportion of these exhibits were on original and unpublished work.

As was to be expected, many of the papers in the gastric surgery forum were on various aspects of vagotomy, both in the human subject and in experimental animals. In the cardiovascular surgical forum there were several papers on portacaval anastomosis, one on a new operation for left coronary thrombosis and sclerosis, and another on experimental methods of aortic valvulotomy. In other sections there were papers on the evaluation of streptomycin in intestinal strangulation and as a pre-operative medicament for abdominal surgery, and studies on its influence on post-operative healing of the bowel. The role of isotopes in biological research was also discussed, and economic details and an account of the liaison between the research worker and the physicist were given.

The twenty-sixth Annual Hospital Standardization Conference was held in conjunction with the surgical conference. Papers and discussions ranged from problems in hospital management and finance, through technical aspects of labour and staffing, to the relative value of various publicity media in attracting public interest and support. Of particular interest was a speech by Prof. Charles B. Puestow, Deputy Chief of Surgery at the Veterans Administration Hospital at Hines. He outlined details of the reorganization programme brought about by General Omar Bradley and Drs. Paul R. Hawley and Paul B. Magnuson, as a result of which the care of ex-G.I.s is brought directly under the supervision of the nation's great medical schools. The programme is not yet completed, but 56 schools are at present supervising the work in 62 V.A. hospitals. The scheme covers the war casualties of thirteen million men and is expected to save \$2,000,000,000 a year. The upkeep of this enormous service is of course borne by the State. It has received a warm reception from a profession which is, by and large, vociferously opposed to State medicine.

In one respect at least the American College of Surgeons can claim to have made history at this convention—in the use of television to demonstrate surgical operations. It may be recalled that this method was used at the Johns Hopkins University earlier in the year when a surgical demonstration was televised to another room in the same building. This week a further step was made. Seven major operations performed on the tenth floor of the New York Hospital were successfully projected on television screens on the fourth floor of the Waldorf-Astoria Hotel. A narrow "line-of-sight" beam was used that could not be picked up by other receiving aërials, thus keeping the broadcast private. This development seems to be an important step in the advancement of surgical teaching. The usual complaint by anyone who has been televised is of the extreme heat generated by the illuminators. Good theatre lighting and a super-sensitive camera make this unnecessary; and, as the lens can be centred directly above the field of operation, the screen gives a view of structures undreamed of by those accustomed to seeing little but the back of the surgeon's head. The viewing was limited to seven small screens, but experiments are being made in the use of a large cinema-sized screen more suitable for class teaching. The estimated cost of this televising, which lasted about 16 hours, is \$5,000, borne in this instance by commercial enterprise.

The convocation ceremony ended the congress on Sept. 12, when 762 new Fellows were admitted into the College and honorary fellowships were conferred on Lieut.-General Robert K. S. Lim, the distinguished Chinese physiologist, and on Dr. Benedicto Montenegro, of Brazil, the author of many communications on gastro-intestinal surgery. Dr. Arthur W. Allen, of Boston, presided at the ceremony, the initiates being presented by the retiring president, Dr. Irvin Abell, of Louisville. In delivering the fellowship address, Prof. Ivy, of the University of Illinois, advocated the establishment of a Federal loan fund for meritorious students who wished to embark upon a medical career. He stressed the value of a loan as opposed to a gift in maintaining the student's proper pride, and gave it as his opinion, based on teaching experience in two world wars, that the institution of Government grants to medical students was followed by a falling off in the standard of work. This, he felt, would not be the case if the money was merely lent and had to be repaid.

Correspondence

Planning and World Population

SIR,—Your recent leading article on "Planning and World Population" (Aug. 9, p. 214) might do real harm by its implication that the economic problems of our African Colonies can only be solved by a decrease, or at least a restraint of increase, of the population. Your final conclusion that unless the birth rate falls in relation to the death rate and the population problem is solved much talk about colonial development and welfare is "whistling in the wind" is so drastic that the grounds on which you make it deserve some analysis.

The doctrine which Malthus propounded in his first edition, and later elaborated, remains as true as when it first appeared. Human populations have a tendency to increase which is far greater than the usual increase in the supportive capacity of land, resulting in a constantly operating check on population from difficulty of subsistence, or the striking of a balance between the numbers of the population and the resources available to support it. The balance is normally held by two types of checks on the population—preventive ones limiting the numbers of births, and positive ones increasing the numbers of deaths through misery, disease, and famine.

At the time when Malthus wrote England was an agricultural country, and the balance was kept with a population density of about 150 to the square mile. Since then an increase in its resources and supportive capacity as a result of industrialization has made possible an increase to 727 people to the square mile, though the next few years will show whether or not the recent loss of many of these resources can be made up to enable this density to be maintained. In India the condition is much the same as that in England at the time Malthus wrote. There is an overall density of about 200 people to the square mile, subsisting on what is on the whole a reasonable utilization of the country's resources. After a long period of practical stasis the population started to increase about 1911 following the reduction of the check of famine, not because the total available foodstuffs increased but because improved transport and organization facilitated the distribution of crops, so that local deficiencies could be matched by surpluses from elsewhere. The limit of increase made possible in this way has probably now been reached, and soon the balance must again be struck either by preventive checks on births such as you advocate or by increase of deaths due to the recurrence of famines and less dramatic food shortages. The resources of the country are at the present time used in a relatively efficient manner, and only some major change in the principles of agriculture could increase them sufficiently to enable India to carry a much greater population.

The condition is much the same in several other tropical countries, notably Java, Mauritius, and Jamaica, with densities of 960, 590, and 278 to the square mile, fully utilizing all the readily available resources of the land. In most African countries, however, the position is very different. The general picture is one of gross underpopulation due to a failure to utilize what should be readily available resources, and to ignorance of the elements of husbandry. It is true that a balance between population and supportive capacity of the land has been reached, but the latter is so clearly open to improvement that advocacy of population restriction is at least still unnecessary, and its practice would result in failure to develop central Africa into an important economic unit.

The density of population in our Colonies on the mainland of Africa varies from 64 to the square mile in Sierra Leone to 1 in Bechuanaland. A representative picture may be drawn from the East and South-east African group of Uganda, Kenya, Tanganyika, Nyasaland, and Northern and Southern Rhodesia with densities of 41, 17, 15, 36, 5, and 11 to the square mile. These countries include mountainous, arid, and infertile lands, but not more so than India. Almost throughout them the rainfall is adequate for the growth of crops and at least as well distributed as in the monsoon countries of the East. Dixey (1926), Gillman (1936), Baker (1937), and Baker and White (1947) have studied their population problems from the ecological point of view. The last authors summarize the position for the whole of south-east central Africa by saying that the population is undoubtedly far below its optimum level. Gillman points to half a million square miles of land in Tanganyika, 62% of the whole country, which is unpopulated largely as a result of the absence of perennial supplies of domestic water readily tapped by primitive tools, though simple methods could supply it. Dixey points to similar areas of great extent in Nyasaland where domestic water is readily available within a few feet of the ground surface though its absence from the surface itself has prevented the development of the country. Similar areas in India such as the Punjab were colonized thousands of years ago by the universal development of wells and water conservation systems.

Without submitting any ready solution of Africa's problems I suggest that it should be borne in mind that the population problem is one of balance, and that the economy of grossly underdeveloped countries can be improved more readily and more to the general advantage of the world by an increase in the supportive capacity of the land than by a restriction of population, though ultimately that must come. Colonial development is not "whistling in the wind" but the essential background of human welfare, which should be at least as much the concern of your readers as the policy of despair you advocate. The ignorant and poverty-stricken peasant is admittedly an inadequate foundation for an enlightened state of society, or for the production of goods to be exchanged with industrial countries. The remedy may lie in the cure of his ignorance and poverty rather than in the restriction of his numbers.—I am, etc.,

London, W.C.1.

G. MACDONALD.

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Poliomyelitis

SIR,—Three out of a total number of 33 cases of acute anterior poliomyelitis under my care have developed symptoms which were regarded as due to paralytic ileus. The three cases were severe, with widespread paralyses, and the symptoms of bowel paralysis appeared three days after the first onset of paralyses in the voluntary muscles.

In one of the cases there was no abdominal pain, but in the other two complaint was made of abdominal aching. In all the cases the abdomen began to swell progressively; the swelling was tympanitic and there was absolute constipation. No flatus was passed. In one of the cases, a woman of 50, the swelling rapidly became enormous, but she complained of no feeling of discomfort. The main danger of the abdominal distension is embarrassment to the heart and respirations in a patient with some degree of diaphragmatic paralysis.

Treatment consisted of 1 ml. of "prostigmin" followed four hours later by a further 1 ml. and a turpentine enema. This resulted in slight colicky pain, followed by the passage of flatus and faeces, with disappearance of the abdominal distension. In children the dose of prostigmin used was 0.5 ml. After the subsidence of the abdominal swelling constipation again followed in one of the cases, but prostigmin 0.5 ml. daily relieved this.

The treatment I have used in all cases with paralysis has been: vitamin B₁ tablets, 1 t.d.s., together with strychnine, 1/32 gr. (2 mg.) b.i.d. in the case of an adult, and 1/60 gr. (1 mg.) in the case of a child.—I am, etc.,

Newport, Isle of Wight.

JOHN MILLS.

SIR,—Though there is no specific treatment as yet for this disease, for some six or seven years I have treated the comparatively few patients I have seen in the very early stages of the attack by intramuscular injections of their own cerebrospinal fluid, 5 ml. given daily or on alternate days according to the severity of the illness, three or four injections being the usual amount. As many patients recover completely without any treatment, and as the general tendency is towards at least partial recovery, it is impossible to assess the value of this or any other form of treatment. In a number of cases it appeared to be of some value towards arresting the progress of the attack.

Two patients were treated by intramuscular injections of blood taken from people who had had the disease; some benefit appeared to result. Is it possible that convalescent serum (such as is given to abort or attenuate an attack of measles) might be of use? Obviously this form of prophylactic treatment could only have a very limited application.—I am, etc.,

Purbrook, Hants.

GEOFFREY EDEN.

SIR,—In Prof. H. J. Seddon's recent paper on the early treatment of poliomyelitis (Aug. 30, p. 319) it is very depressing to read that no really early treatment is possible. During the past few years letters have appeared in the *British Medical Journal* advocating early treatment for herpes zoster—another virus disease which attacks the central nervous system—publishing records of cases showing successful results. In my own

practice treatment of herpes zoster by injections of vitamin B₁, 25 mg., and liver extract and "contramine," 0.125 g., repeated if necessary, appears to have yielded satisfactory results. After a personal attack I can vouch for the fact that these injections are only uncomfortable.

In the present epidemic many cases will probably be diagnosed in the pre-paralytic stage, and it would appear possible that this line of treatment may be worthy of a trial, particularly when there is no alternative. Whether the present widespread sub-optimum intake of vitamin B₁ is a factor in the spread of poliomyelitis is another question which might be asked of those qualified to give an authoritative answer—I am, etc.,

St. Faiths, Norfolk.

J. N. GALE.

SIR,—It was with great interest that I read the note by Dr. J. N. McIntosh (Gloucester) (Sept. 6, p. 398) on the treatment of poliomyelitis by complete rest in bed, sulphonamide therapy, and isolation, and I would like to emphasize the necessity of giving the sulphonamides in massive doses in the early stage of the illness, especially in the more severe type of case, if subsequent paralysis is to be avoided. In such cases the drug should be given intravenously, due regard being paid to the fluid intake, alkalis, and the cytology of the blood. Initially I give for a young adult with a severe attack 4 g. of a soluble preparation of sulphonamide by the intravenous route, followed by 3 g. at intervals of twelve hours for two or three days.

In a series of over twenty cases of the severe type treated on these lines there has been either no paralysis supervening, or, where treatment was delayed and paralysis had already commenced, there has been no further extension of it.—I am, etc.,

Harrogate.

SINCLAIR MILLER.

Early Diagnosis of Tuberculous Meningitis

SIR,—Now that centres have been established for the treatment of military tuberculosis and tuberculous meningitis by streptomycin, a readjustment is necessary in our ideas about these forms of tuberculosis. Previously a diagnosis of tuberculous meningitis has been a sentence of death, only to be accepted when there is no longer any possibility of error. The possibility of cure has altered that, and early diagnosis has become a matter of particular importance, for it is not to be expected that patients will recover completely once damage to the brain has occurred. Therefore, it is necessary to study the early diagnosis of tuberculous meningitis. As the result of more than twenty years' experience in the treatment of children with tuberculosis I have formed the following opinions.

In many cases there is a prodromal period during which the disease is establishing itself and during which the signs and symptoms are very variable. The chief aids to diagnosis are clinical and neurological examination, examination of the cerebrospinal fluid, and radiography of the lungs. Any one of these may precede the others in providing evidence on which to base the diagnosis. Gross evidence, either clinical, laboratory, or radiological, means that the disease is becoming established, and brain damage may be already present. Fever of unknown origin and persistent headache in a child, especially one who is a tuberculosis contact or has some overt tuberculous disease, merit lumbar puncture and chest radiography. Even when neurological signs are absent, and when the cerebrospinal fluid is normal except possibly for a slight rise in the lymphocyte count, early military tuberculosis may be seen in the lungs; or, if the chest x-ray examination and neurological signs are negative, the cells in the cerebrospinal fluid may be definitely increased.

Early neurological signs may be equivocal and it is unwise to delay until they become well established. If there is present a combination of fever of unknown origin, persistent headache, and some definite evidence, however slight, from any of the triad, clinical, laboratory, or radiological, then streptomycin should be started. A specimen of the cerebrospinal fluid, injected before treatment into a guinea-pig, will probably reveal later whether the patient has been cured of tuberculous meningitis or an error in diagnosis has been made. In either case the patient's life will have been safeguarded to the best of the doctor's ability.—I am, etc.,

Braintree, Essex.

M. C. WILKINSON.