Fetal Lung Culture	% Macrophage Slowing*
Ca.B.P. (made from human cancer of cervix uteri) ..	14.6
Suspension human fetal lung frozen immediately prepared ..	9.2
30 min in culture at 37°C ..	8.6
1 hr " " " " " " ..	9.1
2 hr " " " " " " ..	8.9
3 hr " " " " " " ..	9.2
4 hr " " " " " " ..	10.6
5.5 hr " " " " " " ..	12.5
11 hr " " " " " " ..	14.9
21 hr " " " " " " ..	15.2

*If t_e = migration in presence of antigen t_c = migration without antigen: then $t_e > t_c$, and $t_e - t_c / t_c \times 100$ represents the slowing induced by antigen and is a measure of lymphocyte sensitization.¹ Differences > 2.1 are significant at $P = 0.01$.

stimulatory capacity of the cultured cells limited to fetal lung but occurred also with fetal brain and thymus.

The conclusion drawn from these experiments is that freeing of fetal cells from their organized tissue context quickly leads to the emergence of new surface antigen(s) with stimulatory properties vis-à-vis cancer-patient lymphocytes similar to those of frankly cancerous cells. As with cancer cells, killing does not interfere with this new-found antigenic activity and many of the properties of the new cancer-like antigen are identical with that of Ca.B.P. A full account of these properties will be given elsewhere.

To compare in detail the characters of true Ca.B.P. and that which apparently appears on the surface of normal cells once they have been grown in vitro may throw light on the nature of the cell-to-cell signalling which is so important in preserving order in a tissue. It seems possible that the new surface determinant(s) appear as soon as the cell goes into mitosis in an environment free from normal restraints of cell contiguity. Studies with synchronized cell cultures should be instructive.—We are, etc.,

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- 1 Caspary, E. A., and Field, E. J., *Annals of the New York Academy of Sciences*, 1965, 122, 182.
- 2 Field, E. J., and Caspary, E. A., *Lancet*, 1970, 2, 1337.
- 3 Caspary, E. A., and Field, E. J., *British Medical Journal*, 1971, 2, 613.
- 4 Carnege, P. R., Caspary, E. A., and Field, E. J., *Biochemical Journal*, 1972, 126, 5P.

Immunological Control of Schistosomiasis

SIR,—The leading article (12 August, p. 366) entitled "Immunological Control of Schistosomiasis" underlines the restrictive thinking of some medical people. The article gives a lucid portrayal of a useful piece of work but denies that there is an immediately applicable solution to the problem of schistosomiasis control. A further statement reads "the people are demanding that something should be done to rid them of their haematuria and hepatosplenomegaly." If the potential of the people to rid themselves of this blight were realized the unjustified pessimism of the article would be refuted, particularly with regard to snail control, which is stated to be impractical.

In the People's Republic of China schistosomiasis has ceased to be a serious nuisance. In particular the Yangtze Basin, where prior to 1955 there were an estimated 10 million sufferers,¹ is now effectively snail free. Success

came from the simple expedient of educating everyone in the life style of the snail and nature of the disease. After this the community worked out the best way of eliminating the disease, and with the resources they had available (knowledge, community feeling, good organization, and, in the main, a whole-hearted desire to be rid of the disease), decided this would be by elimination of all snails. They knew that if the snails, the majority of which lived on the water line, were deprived of air and water they died quickly, so the canals, rivers, and ditches were temporarily drained in rotation and their banks dug over to bury the snails. Where this was impossible flame throwers or chemicals were used. When the waterways were replenished snail patrols with trained "snail spotters" were set up to ensure that the snail did not get a hold again. Further, a member of each community was instructed in the art of faecal examination, which is carried out biannually on every person in a previously endemic area, and thus any new cases were found early.

The message is clear. Elimination of this disease and many others is possible if doctors all over the world have the breadth of vision, courage, and determination to take medicine to the people and allow them to effect their own cures rather than awaiting miracles from the boffins.—We are, etc.,

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- 1 Horn, J. S., *Away with all Pests*. London, Hamlyn, 1969.

Toxicity of Thallium

SIR,—Your leading article on thallium poisoning (23 September, p. 717) missed a recent therapeutic development. A group of Dutch workers, after showing that sodium diethyl-thiocarbamate made matters worse because the chelate reached the brain more readily than the ion, have shown that Prussian Blue orally gives promising clinical results. References to the earlier work, and reports on three patients may be found in a paper by H. H. Kamerbeek *et al.*¹ It is suggested that the binding of thallium in the intestine to Prussian Blue (and hence its extraction and elimination from the body) arises from an exchange of potassium ions in the crystal lattice with thallium ions (ionic radii 1.33 and 1.44 Å respectively). I understand that in a patient with diarrhoea, a colourful nursing situation arises.—I am, etc.,

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- 1 Kamerbeek, H. H., Rauws, A. G., Ham, M. ten, and Heijst, A. N. P. van, *Acta Medica Scandinavica*, 1971, 89, 321.

Immunological Responses in Pregnancy

SIR,—The paper by Dr. Ronald Finn and others (15 July, p. 150) suggested that a reduction in T-cell activity during pregnancy may help protect the fetus from rejection by its mother's immunological mechanisms.

We have studied the effects of normal maternal serum on the mixed lymphocyte reaction (M.L.R.) between lymphocytes from unrelated adult donors and have found a substantial suppression of transformation as measured by ³H-thymidine incorporation.

Furthermore, we have found that the M.L.R. between maternal and fetal (cord blood) lymphocytes from the same pregnancy is much less than the M.L.R. between unrelated adult lymphocytes. However, the inclusion of autologous maternal plasma did not reduce the M.L.R. between maternal and fetal lymphocytes.

We believe that this suggests the presence of a humoral factor in maternal plasma which "binds" to either the maternal or the fetal T-cells or both, thereby blocking their activity.—We are, etc.,

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SIR,—Dr. Ronald Finn and others (15 July, p. 150) pointed out significantly reduced responses, assessed by means of morphological differentiation, to phytohaemagglutinin and to tuberculin in pregnant women when compared with normals. Similar significantly reduced responses to phytohaemagglutinin, also assessed by means of morphological differentiation, were observed by us in 14 pregnant women when compared with an equal number of controls, with means of 53.4% and 78.8% of "blast-like cells" each and $P < 0.001$ when assessed by means of a F test.¹—We are, etc.,

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- 1 Arala-Chaves, M., and Meirinho, M., *Acta Obstetrica y Ginecologica Hispano-Lusitana* (Barcelona), 1969, 17, 290.

Effects of Dietary Fibre

SIR,—The letter signed by Sir Charles Dodds and others (19 August, p. 472) commenting on the current notion¹ of relationship between the fibre content of food, faecal bulk, intestinal transit time, and various "diseases of civilization" gives an interesting historical angle to this obviously controversial problem. It might be appropriate to point out that the subject was taken up at the beginning of this century by Ilia Metchnikov, famous for his zoological studies and his discovery of phagocytosis. It led to a clash between the Russian scientist, then working at the Pasteur Institute, and the opponents of his theory.

In a series of scientific papers and a volume of essays² published in 1904 Metchnikov came to the conclusion that premature senility and death of contemporary man is due to the structure of his large intestine. The process of high "microbial multiplication" that takes place in it leads to constipation and autointoxication. This is particularly pronounced in "civilized countries" because of their diet rich in processed foods. In another volume and a series of articles^{3,4} Metchnikov carried his thesis still further by arguing that lactic acid fermentation has an "antiputrescent" action and that simpler diet with the addition of sour milk, yoghurt, and similar products of fermentation under the action of *Bacillus bulgaricus* is an answer to the problem. The ideal aim of the human race is "orthobiosis" or the harmonious course of vigorous human life until its natural death at an advanced age.

Through the remaining two decades of his

life Metchnikov strictly followed his own dietetic rules but nevertheless suffered from ischaemic heart disease and severe atherosclerosis.⁷ He died in Paris in 1916 at the age of 71.—I am, etc.,

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- 1 Burkitt, D. P., *Lancet*, 1970, 2, 1237.
- 2 Painter, N. S., and Burkitt, D. P., *British Medical Journal*, 1971, 2, 450.
- 3 Metchnikov, I. I., *The Nature of Man*, transl. by P. Chalmers Mitchell. London, Wm. Heinemann, 1904.
- 4 Metchnikov, I. I., *The Prolongation of Life*, transl. by P. Chalmers Mitchell. London, Wm. Heinemann, 1907.
- 5 Metchnikov, I. I., *Annales de l'Institut Pasteur de Paris*, 1908, 22, 929.
- 6 Metchnikov, I. I., *Annales de l'Institut Pasteur de Paris*, 1910, 24, 755.
- 7 Metchnikov, Olga, *Vie d'Elie Metchnikov*. Paris, Alcan, 1920.

Predicting Survival in Terminal Cancer

SIR,—Dr. C. Murray Parkes (1 April, p. 29) reported on the inability to estimate survival of terminal cancer patients. Our experience with somewhat less ill patients has been that our colleagues are able to forecast survival with some accuracy.

In a controlled co-operative clinical trial designed to study the survival of lung cancer patients treated with methotrexate participating physicians were asked to predict survival prior to entering a patient onto study. Though protocol required that estimated survival be at least two months, seven patients with an estimated survival time of less than two months were admitted to the trial.

TABLE 1—Estimated and Median Actual Survival Times in 178 Patients with Lung Cancer

Estimated Survival (Months)	No. of Patients	Median Actual Survival (Weeks)
Two or less ..	33	6
Three or less ..	46	12
Four or less ..	44	19
Five or more ..	55	22

Table 1 shows the estimated and median actual survival times. The actual survival times are in good agreement with the estimated, and clearly our physicians can distinguish between a patient with a prognosis

TABLE II—Number of Underestimated and Overestimated Survivals in each Prediction Group

	Total	Prediction Group (Months)			
		Two	Three	Four	Five or More
Underestimated (Actual Survival greater than expected) ..	86	15	22	23	26
Overestimated (Actual Survival less than expected)	92	18	24	21	29
Percent underestimated	48	45	48	52	47

of two months or less and a prognosis of five or six months (only three patients had estimated survivals of more than six months). Survival curves in Fig. 1 (plotted on semi-log scale) also show that the physicians can separate the three-month group from both the two-month and the four month group. Differences in survival between the estimated four-month group and the five-month group are small but in the direction expected.

When one looks at data on the individual patient it can be seen that our physicians underestimated survival just about as often as they overestimated. Table II shows the number of underestimated and overestimated survivals for each prediction group. The proportion underestimated in the two-month prediction group was about the same as that for the five-month plus group (no trend in overestimating was seen with increased estimates of survival).

We believe that the ability of our colleagues to estimate survival may provide us with another parameter against which to measure the effectiveness of a treatment. A full report on the trial and on the effects of methotrexate is in preparation.—We are, etc.,

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Radioisotope Detection of Venous Thrombosis

SIR,—Dr. K. Jeyasingh and others (26 August, p. 500) make two assumptions for which they do not provide any evidence. The first is probably true except under particular conditions (for example, trauma) and is assumed by most investigators who use the ¹²⁵I-fibrinogen test. The second can rarely be made for two reasons.

Firstly, vasomotor and in particular venomotor tone is variable. Even if the limbs are elevated local changes of venous capacitance may produce pooling of radioopaque dye or radioisotope. Such changes may cause local alterations in radioactivity,¹ and though these often may not persist for 48 hours they must be taken into account. When comparison is made with the other limb over this period a diagnostic error is unlikely. However, comparison with the precordial count will permit bilateral changes of vascularity to appear as "thromboses." Secondly, the precordial count may be affected by myocardial infarction so that the reference point is not constant.²

It is necessary to establish a new test by some existing criteria—for example, pathological or venographic evidence. The latter may not show small thromboses which the established ¹²⁵I-fibrinogen technique demonstrates. If the latter is their criterion the new

test they are introducing has a high incidence of false-positive results. We still do not know the clinical importance of ¹²⁵I-fibrinogen-positive thromboses. Even the simplest test is time-consuming and must be proved before it should be generally applied.—I am, etc.,

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- 1 Griffiths, P. A., and Talbot, S., *British Medical Journal*, 1971, 4, 624.
- 2 Simmons, A. V., Sheppard, Margaret A., and Cox, A. F., *British Heart Journal*, 1972, 34, 711.

Guillain-Barré Syndrome after Measles

SIR,—One may question whether the two cases of Guillain-Barré syndrome after measles described by Drs. Gunilla Lidin-Janson and Ö. Strannegård (3 June, p. 572) had either disease. The morbilliform rash described may occur with a variety of viral and other diseases besides measles. Koplik's spots, a characteristic of measles,¹ apparently were not seen. The serologic data are not convincing either, indicating only that both patients had experienced measles at some time. The fall in complement fixation antibody suggests that infection was recent, without pinpointing the time, only if acute and convalescent sera were done in the same test.² Thus, neither the clinical nor laboratory data support the diagnosis of measles "beyond doubt."

Nor should one accept without question the diagnosis of Guillain-Barré syndrome in these patients—rather they would seem to have had primarily encephalomyelitis with a polyneuritis, which has been described previously following measles and other infectious diseases.^{1,3} To diagnose the Guillain-Barré syndrome one should find increased protein in the C.S.F. without an increase in cells.³ The latter data were not provided for either patient.—I am, etc.,

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- 1 Rake, G., in *Viral and Rickettsial Infections of Man*, eds. T. M. Rivers, and F. L. Horsfall, jr., 3rd edn., p. 741. Philadelphia, Lippincott, 1959.
- 2 Katz, S. L., and Enders, J. F., in *Diagnostic Procedures for Viral and Rickettsial Infections*, eds. E. H. Lennette, and N. J. Schmidt, p. 518. New York, American Public Health Association, 1969.
- 3 Brain, W. R., *Clinical Neurology*, p. 280, 306. London, Oxford University Press, 1960.

Levodopa and Arrhythmias

SIR,—I was interested to read the paper by Dr. R. B. Jenkins and others (26 August, p. 512) on levodopa therapy in 40 patients with Parkinsonism and heart disease. Since coronary heart disease and Parkinsonism often occur in the same age group it is reassuring to note that little increased hazard attended the administration of levodopa in their series of cases.