One month later his behaviour showed a further temporary deterioration after chewing several inhalers. A further similar episode occurred six weeks ago. He required heavy sedation for 48 hours, after which his condition settled and his treatment was continued as before. It was found retrospectively that he had been chewing inhalers during the period immediately before his admission.

The practice of breaking open amphetamine inhalers and chewing their contents for their stimulant properties was well recognized up to the withdrawal of these inhalers from the commercial market. The risk of exacerbating quiescent schizophrenia by this practice has been reported.[1] We should like to draw attention to a new amphetamine-like inhaler which has become easily available to the public. Like its predecessors, it seems not only open to the abuse of being dismembered and chewed but also capable of exacerbating quiescent schizophrenic states like amphetamine inhalers. Marsden and Sheldon (18 March, p. 730) have also reported the syndrome of "shock lung" following ingestion of the contents of the inhaler bought without prescription. The severe psychiatric and physical complications resulting from abuse of these nasal inhalers raises the question of whether like their amphetamine predecessors they should be available only through medical prescriptions.—We are, etc.,

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1 Johnson, J., and Milner, G., *Acta Psychiatrica et Neurologica Scandinavica*, 1965, 42, 352.

Twins and Cancer

SIR,—Several statements made by Dr. R. A. Strang (29 July, p. 294) are of doubtful validity. In particular, I would not wish your readers to believe that the incidence of childhood cancer among twins was 1·9%, as Dr. Strang stated. This figure was incorrectly deduced from the article, "Reported Influenza in Pregnancy and Subsequent Cancer in the Child," by Mrs. Jean Fedrick and Dr. Eva D. Alberman (27 May, p. 485). In their study questionnaires were completed for 98% of the babies born in England, Wales, and Scotland in the week 3-9 March 1958. The authors do not state specifically the numbers of single and multiple births. However, an estimate of the number of pairs of twins can be made using the fact that 17,204 mothers gave birth to 17,418 babies. With the assumption that no triplets or multiple births of higher order occurred, these figures imply that there were 214 pairs of twins—that is, 428 twin babies and 16 990 single births.

From the original article no deductions can be made about stillbirths and neonatal deaths of twins, but out of the 20 cases of childhood cancer two are twins (for both the co-twin was unaffected). Thus the incidence of cancer among twins is 0·47% and *not* 1·9%. The incidence of cancer in single-birth children is 0·11%, and we can note that the rate for twins is approximately four times that for single-birth children. If the true incidence of cancer was the same for children whether they were twins or not then my calculations show that the observed result or one more extreme would occur with probability 0·08. So, though in this particular study the twins seem to be more liable to develop cancer, the figures do not provide conclusive evidence of an underlying difference.—I am etc.,

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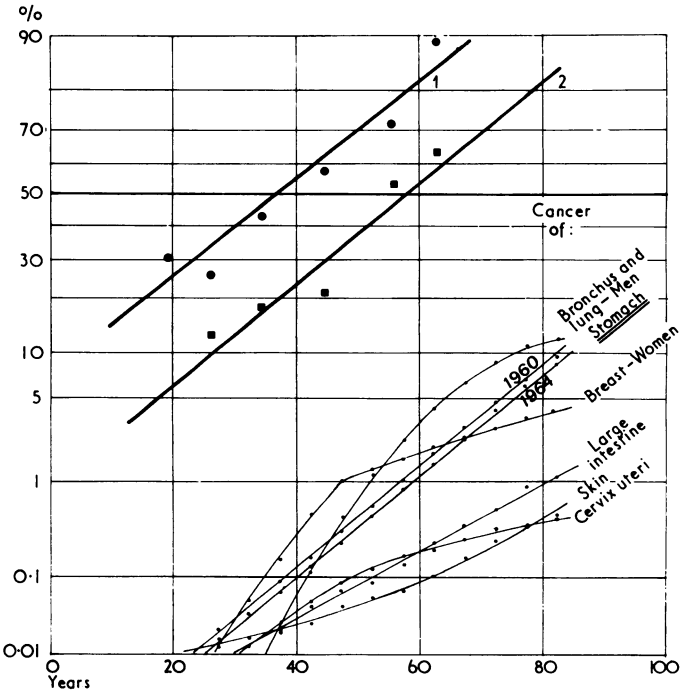
Gastritis and Gastric Cancer

SIR,—We have read with interest the leading article on the potential relationship of gastritis and gastric cancer (6 May, p. 309). We should like to comment further on this topic by stressing a few, in our opinion, salient points and by reporting some findings of our own.

You mention that we found nine gastric cancers in 116 patients with atrophic gastritis.[1] It should be noted that among members of the group (totalling 261 subjects) who originally had normal gastric mucosa or superficial gastritis only one gastric cancer was found (the tenth case found in our follow-up study;[2] in this case, too, cancer was preceded by atrophy of the gastric mucosa). The difference is statistically highly significant, and we do not believe that equally strong indications have been found in any other aspect of the aetiology of gastric cancer.



Age-specific prevalence (in ten-year age groups) of (1) superficial or atrophic gastritis, (2) atrophic gastritis in a Finnish random population survey (142 subjects), plotted on normal distribution chart ("probits" over age); also entered in the figure: "prevalence" of gastric and some other cancers, cumulatively synthesized (disregarding drop-out) from incidence data in Finnish Cancer Register.

As you observe, the aetiology of atrophic gastritis is largely unknown. A recent series[3] which was collected by Dr. Varis, one of our team, discloses among the first-degree relatives of index patients with severe atrophic gastritis earlier occurrence of chronic gastritis and its more rapid progression than in a randomly selected normal population, resulting in a higher prevalence of severe atrophic gastritis in the former, at a statistically significant level ($P<0·05$). If the "heritability" is calculated according to Falconer[4] its value is as high as 79·5 ± 25·2%. Genetic analyses suggested a polygenic type of inheritance as in many common diseases.[5] All we can say at present is that it seems as if external factors are able to induce atrophic gastritis only in a susceptible gastric mucosa and if the susceptibility is genetically controlled.

As a further mathematical elaboration of the polygenetic inheritance pattern as presented by Falconer,[6] we plotted the age-specific prevalences of all gastrites and all atrophic gastrites in our random sample of a Finnish rural population[7] on a normal distribution chart, together with a presentation of the cumulative incidence of gastric cancer in Finland, transformed to represent a comparable mathematical quantity (Fig.). The graphs are strikingly similar, in contrast to those of some other types of cancer also entered in the figure for comparison. An attempt is also under way to treat our findings in terms of general stochastic (actuarial) risk theory,[8] which is less encumbered by restricting assumptions.

From a series now in progress concerning the prevalence of gastritis in first-degree relatives of index patients with gastric cancer we can already report 67% gastritis of any type and 44% atrophic gastritis among 72 subjects. These figures distinctly exceed those of the population at large.

We agree emphatically with you on the need for further investigations concerning atrophic gastritis and cancer and their

potential connexion. We hope that some of the answers may be forthcoming from studies of the kind reported here.—We are, etc.,

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C. albicans Resistance to 5-Fluorocytosine

SIR,—Following the recent letter from Drs. R. J. Holt and R. L. Newman (17 June, p. 714) concerning the emergence of 5-fluorocytosine (5-FC)-resistant strains of candida in urinary candidiasis we should like to report a similar occurrence in a case of monilial endocarditis.

The patient, a man aged 53, had an aortic valve debridement in 1963. In April 1971 he was admitted to another hospital with endocarditis due to *Streptococcus viridans* which was apparently successfully treated with a six-week course of parenteral penicillin and streptomycin. A few weeks later he relapsed and was transferred to this hospital. *Candida albicans* was isolated from several blood cultures. The patient was given amphotericin B for one month with no response and the development of toxic effects on the bone marrow. A recently isolated strain of *C. albicans*, which appeared to be homogeneous, was shown to be fully sensitive to 5-FC (M.I.C.<0·4 μg/ml), and from October 1971 the patient was given 200 mg/kg body weight of the drug daily. Clinical improvement was rapid and blood cultures soon became sterile. Satisfactory blood levels of 5-FC (30-110 μg/ml) were maintained. Agglutinins to several species of candida which were present in significant titre before the drug was given (*C. albicans* 1/128, *C. quilliermondii* 1/512, *C. parapsilosis* 1/512) fell to less than 1/4 within three months, though precipitin antibodies which were demonstrated before treatment were still present.

In January 1972 he was discharged on a daily regimen of 200 mg/kg body weight of 5-FC. After six months' continuous treatment, during which the previous satisfactory blood levels were maintained and the patient remained well with no evidence of endocarditis, he relapsed. *C. albicans* grown from his blood and throat were resistant to 5-FC (M.I.C.>500 μg/ml) and the drug was discontinued. Agglutination titres were still less than 1/4 and precipitin tests positive. The organism was moderately sensitive to clotrimazole, which was given in a dose of 100 mg/kg body weight daily. After 10 days of this treatment, when there had been no clinical improvement and *C. albicans* was still isolated from the blood, the patient died suddenly after rupture of an aortic valve cusp. *C. albicans* isolated from vegetations on the aortic valve was fully resistant to 5-FC.

It is of note that, unlike amphotericin B, both 5-fluorocytosine in a large dose and clotrimazole were well tolerated by this patient and there was no evidence of hepa-

We thank Dr. N. S. Mair and Mr. E. Fox of the Public Health Laboratory, Leicester, Dr. R. Holt of Queen Mary's Hospital, Carshalton; and Miss Christine Philpot of the London School of Tropical Medicine and Hygiene for the laboratory investigations and Dr. C. W. Lawson, under whom the patient was admitted, for permission to publish this letter.

We are, etc.,

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Erythema Multiforme, Addison's Disease, and Stevens-Johnson Syndrome

SIR,—With reference to your leading article (8 January, p. 63), we would like to report a very unusual case of Stevens-Johnson syndrome.

A woman aged 61 years was admitted for the first time to our clinic in 1958 with a subarachnoid haemorrhage. She had malignant hypertension, the cause of which was tuberculosis of the left kidney. The affected kidney was removed and the symptoms of malignant hypertension improved slowly.[1] Thirteen years later the patient started complaining of abdominal pains, violent vomiting, muscular weakness and asthenia. She had pigmentation of the skin and her plasma potassium was 7·2 mEq/l. The patient's condition when admitted, was serious. At first it was thought that the cause was insufficiency of the remaining kidney, yet a thorough examination excluded renal insufficiency. Addison's disease was diagnosed, and within two days after starting substitution treatment her condition improved dramatically. At that time, however, symptoms of erythema multiforme appeared, the skin and all mucosal membranes being affected. Coma and death followed in spite of energetic treatment. Postmortem showed tuberculosis of the remaining suprarenal gland, and in the skin a collection of pigment, characteristic of Addison's disease. The inflammatory changes found in the skin and mucous membranes were consistent with the Stevens-Johnson syndrome.

The case described above seems to us to be interesting in so far as we have never found, in the available literature, coincidence of three such rare disease unities. This coincidence may confirm to some degree the hypothesis of tuberculous origin for the Stevens-Johnson syndrome.[2]—We are, etc.,

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Profession's Relation to Cultural Environment

SIR,—Dr. E. T. O'Brien's Personal View (22 July, p. 230) is both charming and facetious. He also manages to place before the profession its most pressing dilemma—the profession's estrangement from its cultural environment. This is a serious problem, both personally and collectively.

From the collective point of view the culture of the great outside may matter little to a few categories of specialist, but to the general practitioner it is of extreme importance and to the psychiatrist it is crucial. Sooner or later the profession will have to face up to defining its norm for patient behaviour, and as universally acceptable moral attitudes no longer exist this will have to be done on a biological basis. This raises the conflict between species welfare and individual welfare. Should medicine continue to practise on the exclusive basis of individual welfare even if this seems socially or biologically unsound?

On the personal side I do not know how rewarding is the doctor's "total involvement" in medicine. Where, for instance, does the family fit in? Exclusive involvement in medicine is something not acceptable to my personal culture, even if it were generally considered highly desirable, which for general medical practice I think it is not. While some may consider total involvement most commendable, I have every sympathy with Dr. O'Brien's desire to scream.—I am, etc.,

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Expedition to Asia

SIR,—I was pleased to read Dr. C. D. Holme's letter (27 May, p. 534) referring to the coming Comex expedition. His comments that hazards to health are numerous and "a doctor will find himself dealing with a host of emergencies, both major and minor," are timely in view of the somewhat inept comment in the article in *The Times* of 24 May dealing with the same expedition, in which the statement was made that "fitness is an essential, but not necessarily a guarantee of immunity *from dysentery and other minor horrors*" (my italics).

Among the latter I presume was included malignant malaria, which is endemic in some of the areas visited. With proper antimalarial precautions the chances of infection should be small, but it is possible that someone one day will return from an expedition of this sort with malignant malaria which is a killer if not diagnosed promptly and treated. The numbers involved are likely to be very small, but it will be little compensation for the patient or for his family to know as he is dying from malaria that he represents only a minute statistic.

I hope, therefore, that the members of these expeditions will be advised, should they become ill on return, to seek medical advice and tell the doctor where they have been and when.—I am, etc.,

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Conquest of General Paralysis

SIR,—Dr. J. Purdon Martin's fascinating account (15 July, p. 159) calls to mind the extraordinary fillip which general paralysis