Correspondence

Because of the present high cost of producing the Journal, and the great pressure on our space, correspondents are asked to keep their letters short.

Carcinogens in Cigarette Smoke

SIR,—With reference to your leading article in the *Journal* of November 20 (p. 1213), I should like to add to the information previously published¹⁻⁴ on the conditions of combustion of cigarettes and of chopped paper in the form of cigarettes. The author of your leading article states that it would be of interest "to know at what temperature the all-paper cigarettes were smoked and how long they took to smoke." I am now able to provide some information from very recent experiments upon the temperatures attained.

With Virginia cigarettes of a popular brand sold in this country we found the average temperature inside the burning cone to be about 650° C., and during suction the temperature rose by about 50° C. The temperatures were not significantly different when the thermojunction was inserted at different depths from the cigarette surface. The temperature of the surface at the burning end during suction was estimated at about 900° C. by using a disappearing-filament pyrometer. Throughout these experiments the cigarettes were burnt mechanically in the apparatus described elsewhere,² under the conditions of average human smoking.

With chopped paper "cigarettes" temperature measurements were more difficult to make owing to the irregularities of burning. However, the conditions were standardized so that the rate of combustion (weight/unit time) was the same as in the smoking of real cigarettes, and this involved burning three, each weighing about one-third of a gramme, in approximately the time taken to burn one tobacco cigarette. Average temperatures in the burning end were measured by inserting a thermocouple through the covering paper and smoking until the hot zone surrounded the junction. The highest temperature recorded within the hot zone during suction was 655° C. It was almost impossible to measure the swing of temperature from the quiescent state to the suction state because of the rapid rate of travel of the burning zone, but it is certain that fluctuations of temperature are greater during the combustion of paper cigarettes. The surface temperatures were estimated to be over 900° C. In conclusion it may be said that the temperatures attained in combustion of paper cigarettes are not greatly different from those in tobacco cigarettes.

If the proportions of combustion products from the paper cigarettes are the same as from the paper covers, which make up about 4% of this weight of real cigarettes, one may infer that the paper contributes about one-twentieth of the total 3:4-benzpyrene found in cigarette smoke. In support of this assumption recent experiments upon the smoke from Virginia tobacco taken from cigarettes and smoked in a pipe connected to the smoking machine indicate that the major proportion of 3:4-benzpyrene found in cigarette smoke comes from the tobacco.

Finally, some readers might assume that the amounts of benzpyrene present in cigarette smoke and in the urban atmosphere are both taken into the lungs of a smoker living in a town. This is, of course, not so; the analyses represent maximum amounts, and we were careful to make this clear in our original paper.⁴ As yet there is very little information about the penetration of particles of different sizes and composition into the respiratory tract, and the fact that town smoke is inspired chiefly through the nasal filter, which tobacco smoke escapes, must always be borne in mind.—I am, etc.,

London. E.C.3.

ARTHUR J. LINDSEY.

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Appendicectomy in Chronic Appendicitis

SIR,—I have been most interested to read the original article by Mr. Iain McLennan and Mr. J. Kennedy Watt (*Journal*, September 25, p. 736) on chronic appendicitis and the subsequent correspondence. The percentage of cures in adults in my own series of cases is very similar, while in children the percentage of cure is even higher. I agree that the results of operation in cases of the so-called appendix dyspepsia are most disappointing, as are those cases where the appendix is found at operation to be markedly fibrotic.

I would say, quite dogmatically, that chronic inflammation of the appendix gross enough to be visible to the naked eye is extremely rare. I am sure that the figures quoted, such as those of Shelley,^{1,2} are very misleading. This may be due to the efforts of well-meaning and kindly pathologists who spend many hours searching the sections for any excess, however little, of fibrous and lymphatic tissue. I am quite certain that the commonest cause of abnormal physical signs and symptoms in these cases of "chronic appendicitis" is appendicular colic due to the presence of faecal concretions. Calcification of a faecal concretion must be extraordinarily rare, and therefore the term faecalith is a bad one. I am sure that kinks, adhesions, and fibrosis are relatively uncommon causes of symptoms. The association, in a relatively small number of cases, of symptoms of chronic appendicitis concurrently with those of spastic colitis suggests that there is a neuromuscular imbalance, neurotic or hysteric in origin, to blame.

The correspondence has shown quite clearly that opinion is sharply divided into two classes—those who believe that operation is justified if the history of the case and the physical signs suggest that there is evidence of "chronic appendicitis" and that this operation produces clinical cure, and those who suggest that most cases with symptoms of pain in the right iliac fossa are neurotic and that operation should not be entertained unless there is evidence of "disease" of the organ—a situation which is quite absurd when one realizes that it is impossible to diagnose a chronic inflammatory lesion of the appendix.

All that one can do as a surgeon in justification of an exploratory laparotomy in this type of case is to make repeated examinations and a thorough investigation to eliminate other causes of general or right-sided abdominal pain—a procedure which may involve weeks or months of time, but which is essentially necessary. These investigations may involve a complete check-up of the alimentary and genito-urinary tracts. In the majority of cases these investigations prove nothing, but the signs and symptoms persist.

Is one to deny the patient a laparotomy? I think not. The results of operation are so good, whether a normal appendix or an appendix containing faecal concretions is found, that operation is always justified when there has been done a complete investigation to eliminate other causes of abdominal pain. The results of operation bear no relation at all to the operative findings. If the signs and symptoms are caused, as I believe, in most cases by an intermittent mechanical obstruction, why should they? The gridiron incision in these cases is a thoroughly bad one; it should be replaced by either a pararectal or a paramedian incision.—I am, etc.,

London. W.1.

F. W. M. PRATT.

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- Ibid.*, 1938, 37, 17.

Sensitivity to Penicillin

SIR,—Dr. W. J. S. Still (*Journal*, October 30, p. 1032) describes a severe anaphylactic reaction after an injection of crystalline penicillin, with acute abdominal symptoms which necessitated the resection of a length of small intestine. It seems possible that in the following case necrosis of a portion of bowel was due likewise to sensitivity to penicillin.

A 28-year-old woman, following a difficult first labour, received a course of crystalline penicillin (100,000 units by intramuscular injection four-hourly for three days). During the first five days