honorary secretaries, Dr. F. J. C. Blackmore, the Tuberculosis Dispensary, Plumstead, S.E.18, and Dr. J. R. Dingley, Darvell Hall Sanatorium, Robertsbridge, Sussex.

L.C.C. PART-TIME MEDICAL OFFICERS.

The public health department of the London County Council has hitherto employed forty-four part-time medical officers on yearly engagements, fifteen of whom have been employed for six half-days a week and twenty-nine for three half-days. The appointments of these officers expire on March 31st. Four of them are over 60 years of age, and it is not proposed to renew their appointments, and four others do not offer themselves for reappointment. The appointments of the remaining thirty-six officers, all of whom have rendered efficient service, are to be renewed for a further period of one year, and nine new appointments are being made. With these appointments the part-time medical staff will consist of twenty men and twenty-five women doctors, fourteen being employed for six half-days a week and thirty-one for three half-days. The salary for six half-days a week is £360 a year inclusive, and for three half-days £180 a year. The department has also twenty-nine full-time assistant medical officers.

Correspondence.

OPERATIVE TREATMENT OF PERFORATED GASTRIC AND DUODENAL ULCER.

SIR,—I have hesitated to enter into the discussion on the treatment of acute perforating ulcers of the duodenum and stomach, because I consider that it is useless to argue for or against gastro-enterostomy without a searching inquiry into the end-results.

It was my intention to await a period of two years after completing my first hundred cases before committing anything to print, but as I have already operated on over one hundred cases with only four deaths perhaps I may be excused for recording the general impression which I have formed.

Being assistant surgeon to two sets of wards (90 beds), I have to perform between twenty and thirty operations for perforations of the stomach and duodenum every year. The four deaths which I have had occurred before the first hundred series of cases was completed, so that my operative mortality rate is 4 per cent. for that series. As yet there are no deaths in the second series. Three of the four patients who died came from the country and travelled long distances. The other case had pulmonary and abdominal tubercle, and although he had been going about he died three months afterwards while still under my care. In each of the deaths a full *post-mortem* examination was performed. Only four of the perforations were gastric; the others were all beyond the pylorus. There was one case of recurrent duodenal perforation.

On twelve occasions at least the perforation was diagnosed as a case of acute appendicitis. The local treatment varied, but was either (1) simple suture, (2) excision of the indurated area with scissors and suture of the mucous membrane separately from the sero-muscular layer, or (3) cauterization of the indurated area, and in some cases so widely as to allow the mucous membrane to be thoroughly freed. In one case I burned right through the pylorus and did a pyloroplasty.

The infolding sutures are Lembert's, introduced transversely to the long axis of the duodenum, taking a good grip of the bowel wall and beginning distally, and working successively towards the pylorus. All four sutures are inserted before tying is commenced, and then omentum is sutured over all.

Fortunately, all the cases on which I did a gastro-enterostomy recovered. Comparing them with those of "local suture" only, I can definitely say that the cases with a gastro-enterostomy made a better immediate recovery from the actual operation, and I always felt happier about them. On the other hand, some seventy odd consecutive "local suture" cases recovered from this operation, so is there much danger, then, in not doing a gastro-enterostomy?

A gastro-enterostomy does lengthen the operation, but is this additional risk of time worth the more rapid immediate recovery? I cannot say. I am happier about the case where I have been able to do a gastro-enterostomy, but if I am in any doubt I do not do a gastro-enterostomy.

Now, to take the patient three months to a year after operation: I have a bigger percentage of cases returning with ulcer symptoms when a gastro-enterostomy has been performed. The cauterized cases without a gastro-enterostomy are a long way ahead of all the others. The ulcer, as it were, has been completely removed, and two sterilized edges are sewn together and infolded. Why need one do an additional and unphysiological operation in such cases?

These are questions which cannot be answered without careful scrutiny of end-results of many series of cases. My two chiefs will complete reviews of my end-results, so that the question of any bias cannot arise. But there is one point on which I have formed a definite opinion. I consider it practically impossible to narrow the duodenum in juxtapyloric ulcers. As long as the lumen of the duodenum is as big as the pyloric lumen there can be no obstruction. The pylorus itself limits the amount of infolding which can be produced, and a too tightly tied suture very soon cuts out.—I am, etc.,

Dundee, Feb. 18th. JOHN TAYLOR, Ch.M.

THE STATISTICAL STUDY OF CANCER.

SIR,—Two questions have been raised, one of only personal, the other of general interest.

With regard to the former, I still think that a reader of Dr. Cramer's lecture, having no independent knowledge of the facts, might have inferred that the League of Nations Committee paid no attention to any statistics save those of cancer of the breast and uterus in England and Wales and Holland, an inference unjust to the statisticians concerned. I did not suppose that Dr. Cramer intended to misrepresent the position, and am sure that the point has now been made clear. The other question is of much more importance, and I must ask your permission to discuss it because, in my opinion, Dr. Cramer, in his letter of February 16th (p. 346), draws an incorrect particular conclusion from a general principle which is not only sound but of great importance.

The general principle—if I may be allowed to restate it in my own words—is this. No statistical investigation of cancer conducted, as it were, *in vacuo* will really advance our knowledge of etiology. It is true that the great majority of the "proofs" that cancer is "caused" by intestinal stasis, by eating meat, by the use of common salt, and so on, through the whole gamut of theories which so grievously waste the time of busy men, are rendered worthless by patent violations of the canons of statistical inference. But I believe it is also true that even a well trained statistician who acts on the principle that all he needs, in addition to his statistical equipment, is the stock of vague ideas respecting cancer possessed by, say, the average medical man without special laboratory experience, will not achieve anything of value. One reason is this. Incomplete as is our statistical literature of cancer, it is absolutely very large. If all the statisticians of the world were to set about testing the associations between variables which a loose general theorizing might suggest to be *possibly* relevant, they would be all dead before they had made any serious impression upon the data. Attention must, therefore, be concentrated upon associations which special researches have indicated as likely to be of importance, and the decision as to which come within this category is not wholly, not even mainly, a statistical question. The role of the statistician is to test, on the data available to him, hypotheses which, in his quality of technical statistician, he has not originated. He has, of course, like other men, the right to frame hypotheses, but his technical knowledge does not give them any special value.

So far Dr. Cramer and I are in complete agreement. Where we part company is in the particular application of the principle. Dr. Cramer said in his lecture, and virtually reiterates, that if statisticians had grasped the importance of the experimental evidence that the development of cancer in one organ inhibits its independent develop-