of the vibrations of those fibres whose periods lie well outside the period intervening between the first and second noise. If the period between the third and second noise does not differ too much from that between the second and first, those fibres of the basilar membrane whose periodicity corresponds to this period will still be vibrating when the third impulse reaches them, and this vibration will be reinforced, whilst a further number of outlying vibrations will be damped out. The process will be repeated with each succeeding impulse. Thus the crest of the standing wave will tend to become better defined, and to move up the scale in correspondence with the successive shortening of the interval between the impulses. The sensation of a rising tone will be produced.

I am quite conscious that the subject of sound perception is a difficult one, and that many of its details remain obscure. I do not think that the resonance theory can either be established or disposed of in a summary manner or by any single convincing argument. The question must be studied in all its bearings. In delicate adjustment and balance of mechanical factors the cochlea is probably the most refined piece of mechanism with which we are acquainted. Yet I venture to think that in the light of the resonance hypothesis the relation of function to structure is at least as clearly traceable in the cochlea as is the connexion between the machine and its working in other parts of the body. Could we, for instance, deduce the song of the birds from a study of the syrinx, or the complexities of human speech and song from the anatomy of the larynx and upper air-passages?—I am, Sir, yours faithfully,

Sheffield, Nov. 22nd, 1922.

G. WILKINSON.

PANCREATIC EXTRACT IN DIABETES.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Feb. 27th, 1909, you published an article by me on the successful treatment of diabetes in a young girl with "whole" extract of the pancreas given by the mouth. In the *Dublin Journal of Medical Science* for May, 1910, appeared a further paper by me on a New Pancreatic Extract for the Treatment of Diabetes. This extract was made for me by Messrs. Fairchild, the process being the heating of the press-juice of fresh pig's pancreas to 80° C., which precipitated the proteins and destroyed all the external secretions, leaving the internal secretion intact. I obtained very encouraging results with this given by the mouth, distinctly more carbohydrate being utilised, and there was a manifest increase in the feeling of well-being of the patients. Further, it was powerful enough in internal secretion when injected to arrest the oncoming symptoms of coma.

It never occurred to me as practical, nor does it now, to treat such cases by giving injections three times a day. Will it never be generally realised that the important thing is the amount of food materials—carbohydrate, fat, and proteins—utilised that matters, not the amount excreted? In my first paper I stated that the lesion in the pancreas was microbial in origin, and have always taught so since. I am glad this is now accepted. In my paper, the Nature of the Internal Secretion of the Pancreas (*Dublin Journal*, July, 1921), I showed that the internal secretion was not a hormone in the proper sense of the word, but was an essential part of a compound ferment, the heat-labile part of which was produced by the tissue cells.

The Toronto workers can, therefore, not claim priority of the idea to produce a pancreatic extract containing the internal secretion alone; nor can they claim priority of the idea to destroy the external ferment-producing cells by occlusion of the duct—this was a well-known method; nor did they invent the pancreas or its cell-islands.

I am, Sir, yours faithfully,

W. M. CROFTON.

University College, Dublin, Nov. 27th, 1922.

"MORCELLEMENT" OF TONSILS.

To the Editor of THE LANCET.

SIR,—As the translator of "Oto-Rhino-Laryngology" by Georges Laurens, may I be allowed to make a few remarks on the review of this work, which appeared in your issue of Nov. 18th? "Morcellement" for the removal of tonsils is, I agree, not so much in favour, save in specially selected cases, here as in France. During the past 15 years I have enucleated over 1400 pairs of tonsils, but only in 5 per cent. of the cases was the morcelleur used, the practice adopted being complete removal with the guillotine in the case of children, and by dissection in adults. I much regret not having inserted a footnote anent the subject in the translation. With very few other exceptions, the methods of treatment as set forth are those adopted in this country.

I am, Sir, yours faithfully,

New Cavendish-street, W., Nov. 23rd. H. CLAYTON FOX.

INTESTINAL WORMS AND PERITONITIS.

To the Editor of THE LANCET.

SIR,—The article in THE LANCET of Nov. 18th by Dr. W. Nicoll, entitled Observations on the Occurrence and Prevalence of Parasitic Intestinal Worms during the War, seems to throw some light on the cause of the death of Herod as recorded in the Acts of the Apostles. The account of Josephus is (I quote from memory) that "Herod was seized with a violent pain in his belly and died five days afterwards." If we assume that Luke refers to *intestinal* worms the two accounts would tally. In an age and in a clime in which embalming was so prevalent the average physician must have had considerable knowledge of the morbid anatomy of the abdomen and would not be likely to err on the side of attributing too few deaths to intestinal parasites. We appear to be on safe ground if we conclude that Josephus supplies the faithful description of an intelligent layman, while Luke furnishes an accurate certificate of death in harmony with the most recent pathology.

I am, Sir, yours faithfully,

Belfast, Nov. 20th, 1922.

R. M. FRASER, M.D.

THE MERITS OF PROPORTIONAL REPRESENTATION.

GENERAL ELECTION, 1922—COMBINED ENGLISH UNIVERSITIES.

To the Editor of THE LANCET.

SIR,—The methods of counting votes under the system of Proportional Representation used at University contests are puzzling in their application. The votes cast for me were many more than the officially recorded 90. I do not suppose that I was credited with a single vote from the members of the Conservative Graduates Association, who put me up for election! They had been urged to vote for "Faraday and Lawrence"; what more natural than to vote Faraday 1, Lawrence 2? My recorded poll of 90 consisted of "plumpers," or first preferences. Whilst I was unable to receive any addition whatever to my poll from any second preference votes given to me, in the course of four subsequent counts, the totals of other candidates received large additions from that source and (I believe) later preferences. Sir Martin Conway did not reach his quota until after Lawrence and Faraday votes had been transferred and a third count made. Mr. Fisher did not arrive at the same goal until after the transfer of votes for Lawrence, Faraday, and Woolf, and a *fifth* count had been made. The fourth count was concerned in distributing the surplus of Conway votes which originally had been mostly first preferences for my colleague Faraday! My first election experiences leave me in doubt whether the "Proportional Representation" method of voting and counting votes is as perfect and just a system as its advocates allege.—I am, Sir, yours faithfully,

SIDNEY C. LAWRENCE, M.B. Birm.

Bournemouth, Nov. 21st, 1922.