The data are not worth analysing by any very elaborate mathematical method, but the following approximation will serve to determine the magnitude of $e$.

Taking the case of Austria, the cycle extending from 1920 VI to 1921 IV has its mean date as 1920 XI and mean $T = 488$ (unit $10^4$ gold crowns); it is succeeded by a cycle whose mean date is 1921 IX and mean $T = 381$. The values of $Q$ at the two mean dates are 280.7 and 541.1 respectively, so we should have

$$\frac{381}{488} = \left(\frac{5411}{2807}\right)^{e-1}$$

which yields $e = 0.73$.

Treated in the same way, and over the same period, the Polish figures yield $e = 0.67$. In both these cases the value of $P$ was of the order of 1 per cent. or less of the original (or par) value of the money.

German currency has not been depreciated to nearly the same extent, the range in the period considered being between 10 per cent. and 1 per cent. of par. Nevertheless it yields an even lower figure for $e$—in the neighbourhood of 0.5. The mark has certainly been depreciated by other than purely commercial influences.

R. A. LEHFELEDT

The University, Johannesburg,
August, 1922.

THE ECONOMIC BOXES

A Rejoinder

By the courtesy of the Editor and of Professor Pigou I am allowed to append a few notes and comments. My object having been to elicit a reply, I am content to have succeeded and so will be brief. The preliminary sparring before the big blows are hit I will pass over, without denying that so good a sparrer as Professor Pigou "gets in." Neither he nor I think very highly of "pure" economic knowledge which is likely to remain "pure" indefinitely. We agree that a mere study of implications which is fully justifiable "in the kingdom of pure mathematics," or a mere study of facts in succession which may be justifiable in the kingdom of history, would not be justifiable as the main business of economics. I cannot tell him—nor in a similar case, I should imagine, could he tell himself—how much of my rudeness towards the boxes is due to (a) their emptiness and (b) their possible use-

1 See Professor Pigou's article printed above.
lessness if filled. The emptiness is ground common to us both; an important fact, I think.

A word about "complexes." In form Professor Pigou's reference to them is only a sparring point, but I think it has importance. I admit the anti-commodity complex: Professor Pigou has found the right name for my complaint. I know that the term commodity is used in order that it may cover hats and gold watches and onions, and I constantly suspect that the user does not know whether the propositions which he is affirming as to commodities are true of either onions or gold watches or hats. The oftener he does it without an illustration the stronger grow my suspicion and my complex. The cure—in a friend's hands—is a series of illustrative footnotes.

This leads to a point of more general interest. "Dr. Clapham appears to hold that, provided as boxes they cannot be filled, it is self-evident that they can serve no purpose"—"as instruments in the construction of a realistic economic science." "In that I venture to suggest . . . that he has, in fact, misunderstood altogether the nature of the work that he is belittling." Professor Pigou then goes on to show the importance of the laws of returns, or some equivalent, in the whole theory of value, and says that to take them out of their setting is "a very perverse proceeding." I see no perversity in criticising part of a theory; but I was at first disposed to search for empty boxes in more parts than one. This space forbade. I have a fear lest a theory of value which should prove permanently unable to state of what particular and individual values some of its more important conclusions were true might in the long run be neglected by mankind. I fear also that a too constant thinking in terms of commodities may tend to blind "analytics"—to use the nickname as to whose imperfect applicability Professor Pigou and I are in fact at one—to this danger. It was solicitude for the theory of value, not indifference to its complex beauties, which urged me on.

Professor Pigou's argument about the negative use of the boxes, even if empty, is decisive within its range. It is one of the considerations which I had overlooked and which I am glad to have pointed out. "Dr. Clapham will hardly deny that science may help practice by exposing the falsehoods of charlatanry as well as by itself discovering truths." He will not; but he is very anxious that economic science should be able to do more, and that, where and in so far as it is at present unable to do more, it should make the fact quite clear.
I believe I was aware of the "intricate collection of little cases inside" my big boxes; although I seem to have written so carelessly that Professor Pigou can tell people that I "evidently suppose" that "analytics" are only interested in the question whether hats or onions are in big box D.R. or in big box I.R. My natural, and not unscientific, wish was to learn about the big boxes first. When I know that my Botany tops are in I.R. it will be time enough to examine further. Professor Pigou will find a reference to tops which shows that I was not entirely blind to the subdivisions of the big boxes, though I know well enough that he and not I should be entrusted with the labelling of some of the little ones. He has shown, that had I "realised what the issue really was," I could have made this part of my argument much stronger. I always thought I could.

I accept the rebuke, whose point is sharpened by references to ready-made clothes and "a certain naïveté." My statements in the section criticised were exceedingly incomplete. I was not writing a treatise. I was merely anxious to indicate that we have had hitherto, even from the very greatest economists, rather sketchy indications of the probable uses of the big and little cases, when filled. I was not anxious to suggest that it is Professor Pigou's business to teach a brewer to brew; but I think it may be his business, when he says that such and such social consequences will result from a tax on, or a monopoly in, commodities of such and such a type, to be able to tell the brewer whether in this context "commodity" covers beer as well as hats, onions and gold watches.

Professor Pigou does not say whether or not inventions are to be included in that general progress in the efficiency of an industry which tends towards increasing returns. I assume, therefore, that he agrees with me that exclusion will condemn the boxes to perpetual emptiness. His suggestions towards filling the boxes are much scantier than I had thought possible. I made my treatment a trifle crude partly in the hope of provoking someone to say—Give me these and those facts and series of statistics about, say, pig-iron and I will box it for you. I had anticipated that the facts and statistics demanded might be, by common consent, at present unprocurable; but I had hoped that they might be specified. And now I am paid with a cheque drawn on the bank of an unborn Jevons. Can no one give us more current coin? I do not deny that a second Jevons may do this thing; but I do not think that Professor Pigou's reply has given him much help.
Finally, I do not agree that discussions about method are "time wasted in quarrelling," even if, as Professor Pigou suggests, we may have an imperfect understanding of one another's methods. Public discussion elucidates the methods and improves the understanding. There has for some years been too much abstention from it among economists, due in part to a certain very natural piety. Things are constantly said in conversation which never get into print, and we need, as one of us would say, to bring inside and outside opinion into line. Mounted on the smoothly running machine which he handles with such incomparable skill, Professor Pigou may be a trifle impatient of suggestions that a rather differently constructed model might have a longer and more useful life; but that is no reason why the suggestion should not be made, even by a much less expert driver.

J. H. Clapham

Current Topics

At the meeting of the British Association last September, the discussions in which Section F was joined by other sections proved particularly interesting. Before an audience composed of mathematicians and agriculturists, as well as economists, Sir William Beveridge developed the theory of Weather Cycles which he had propounded in the Economic Journal. Professor H. H. Turner, referring to astronomic analogies, opined that extensive observations such as those which Sir William Beveridge had compiled were adequate to afford indications of periodicity; which it was desirable to confirm by discovery of reasons. Mr. Udny Yule, insisting on the dynamic character of economic phenomena, desiderated a law representing the movement of prices and production. As often in physical dynamics, the law might be periodic; the fluctuation being explicable by the psychology of the business man.

The possibility of increasing the food supply of the nation was discussed by the economic and agricultural sections in conjunction. Sir John Russell, Director of the Agricultural Experimental Station at Rothampsted, enumerated various ways in which our crops might be increased. Mr. C. S. Orwin, of the Agricultural Institute, Oxford, showed that increase which was possible might not be profitable, owing to the law of diminishing returns, which he illustrated by remarkable statistics and diagrams. Professor Somerville pointed out that