Now the coordinates of the centre of the nine-points circle referred to the same axes are easily verified to be $\frac{1}{2}R \sin (B - C)$, $\frac{1}{2}R \cos (B - C)$. Transferring the equation of the Simson line to parallel axes through the nine-points centre, the equation becomes

$$x \sin \alpha + y \cos \alpha = - \tfrac{1}{2}R \cos (B - C + 3\alpha) = p, \text{ say} \dots\dots\dots\dots\dots(ii)$$

Now, as in Professor Lodge's article, differentiating and adding squares gives the (p, r) equation of the envelope as

$$r^2 = p^2 + 9(\tfrac{1}{4}R^2 - p^2). \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(iii)$$

Again, as $\psi + \alpha = \pi$, the (p, ψ) equation to the envelope is

$$p = \tfrac{1}{2}R \cos (B - C - 3\psi). \dots\dots\dots\dots\dots\dots\dots\dots\dots(iv)$$

The envelope is the well-known hypocycloid with three cusps, formed by a circle of radius $\frac{1}{2}R$ rolling inside a circle of radius $\frac{3}{2}R$, the point N being the centre of the hypocycloid.   H. N. HASKELL.

CORRESPONDENCE.

SCHOLARSHIP SYLLABUSES.

To the Editor of the *Mathematical Gazette*.

DEAR SIR,—Though when pleading at the 1951 Annual Meeting for a published syllabus for scholarship papers I was careful to say I had in mind a syllabus " not necessarily in great detail, but enough to serve as a guide to teachers without unduly tying down examiners ", I fear I did not stress this point enough, and the subsequent argument was somewhat at cross purposes, owing to apparently quite different ideas of what constitutes a *detailed* syllabus.

I should myself be content with a syllabus *less* detailed than that which is still published with the annual reprint of Oxford University scholarship papers, and which Dr. Ferrar himself, as he told us later in the discussion, helped to draw up. This last fact was not mentioned in your report in the September *Gazette* and I should be grateful if you would allow me to repair the omission now, for it gives a very different impression from that which a reader of your account would derive from the unqualified statement that Dr. Ferrar does not " believe that a detailed syllabus is desirable " and is " altogether opposed to the idea of having one ".

I am certain that some sort of syllabus, dealing at least with the vexed question of border-line topics, is needed, on the score both of fairness to the candidates and, still more, of ordinary efficiency in preparing them *for their university course* (it is *not* a question of training them like circus performers for the scholarship examination—there is just as much, or more, danger of " cramming " without a syllabus). It is very encouraging to learn that the Oxford and Cambridge Joint Board is now proposing, for the first time, to issue a syllabus for their scholarship papers

Yours, etc.,

Clifton College, Bristol.   P. C. UNWIN.

1691. " A Sea Symphony " begins and ends as a song, and as a song it is huge. As a symphony it shrinks in dimensions, belittled by its musical and technical immaturities. What selfless outpouring of voice it demands! Every square inch of lung, every foot-pound of diaphragm pressure, will hardly suffice.—Hubert Foss, *Ralph Vaughan Williams*, p. 91. [Per Dr. W. M. Shepherd.]