

**Alopecia Areata**

Dr. J. SANDISON CRABBE (Birmingham), in reply to "A. A. H.," writes: I wonder if your correspondent among the "usual remedies" has tried strong doses of ultra-violet rays preceded by the high-frequency glass vacuum tube. I have rarely failed to bring hairs on alopecia patches after twelve treatments. It generally shows up about a month after the final treatment.

**Vehicle Sickness**

"S. C." writes: May I suggest that "Yorkshire" (June 24th, p. 1138) should try "vasano" tablets (Schering).

**Income Tax****Life Assurance Allowance**

"R. H. J." has an insurance policy which provides for (a) a pension (or cash payment) at 65, (b) £50 per annum from the date of death until the date at which he would have reached 65, plus a lump sum representing his aggregate contributions accumulated at 3 per cent. per annum, and (c) disablement benefit. What relief can he claim for income tax.

\*\* Where death benefits are combined with others in a policy the income tax relief extends only to that portion of the annual premiums which represents payment in respect of death risk. The benefits covered by (a) and (c) above appear to be outside the scope of the relief, and the question to be decided is how much of that part of the premium paid in respect of (b) relates to death risk. The "lump sum" payment is within that category, and in R. H. J.'s case the inspector of taxes is willing to make the allowance (subject to the usual statutory restrictions) in respect of that benefit. There is another aspect of the question however. The Income Tax Acts provide that the relief shall extend to payments in respect of a deferred annuity payable on the death of the insurer or his wife, provided that the benefits are due under policies for securing a capital sum at death (which is not the case here) or are "made in connexion with any superannuation or bona fide pension scheme for the benefit . . . of persons engaged in any particular . . . profession." Whether the claim to the relief is saved by the latter proviso we do not know, and we suggest that "R. H. J." should put himself into communication with the head office of the company in question and ascertain whether representations have been made to the Inland Revenue Department for a ruling that the company's policies are within that proviso. If so the claim to relief would be appreciably greater than the amount which the inspector of taxes is at present willing to allow.

**LETTERS, NOTES, ETC.****The Ionosphere**

Less than ten years ago the Post Office was attempting to link up the Empire with a series of wireless stations transmitting on very long wave-lengths and employing enormous power—500 or so amperes—in the aerial. Marconi's discovery of the beam system altered the whole situation, and to-day the bulk of wireless telegraphy and telephony round the world is done by means of very short waves projected in the required direction at a slight angle from the surface of the earth and reflected downwards again by ionized regions of the upper atmosphere. The system is incomparably better than the long-wave method, and uses less power, but it is still subject to unexplained interference and fading-out, which may at times impair its efficiency. The reason for this weakness is that the system depends on a reflecting surface, which varies from hour to hour and from place to place according to laws which physicists have hardly begun to understand. Several of the men who are busy charting these mysterious regions—which have been named by Mr. Watson Watt the "ionosphere" by analogy with atmosphere—met at the Royal Society recently to compare notes in a discussion. Professor E. V. Appleton, whose name has been closely associated with the ionosphere in the loose term "the Appleton layer," described some of the results of the continuous research which has been going on at Slough by the method of wireless wave exploration. When a wave of a certain frequency is projected vertically upwards and strikes an ionized layer corresponding to its

frequency it will be reflected back, having undergone certain changes which betray certain facts about the conditions it has encountered on the journey. For instance, it will have taken a certain time which, multiplied by the speed of light, will give, not the actual height, but the equivalent height of the layer which has reflected it. Some echoes are split into doublets by the earth's magnetic field, one half being of left-handed and the other of right-handed polarization. If a series of signals at a given wave-length are sent up and the wave-length is gradually shortened, the echoes will continue to return until a certain frequency is reached, when they suddenly stop. This means that the particular ionized layer has been penetrated, because the ionic density is not sufficient to reflect waves of that frequency. If, now, the frequency is raised still further, another point will be reached at which echoes start to return again. They are now being reflected from a more remote region of three or four times as dense an ionization as the nearer one. If the frequency is increased still further the waves will penetrate the whole ionosphere and go out into space. The lower region, about 105 kilometres above the earth, is called E; the upper region, at about 180 kilometres, is called F. In addition, intermediate layers of lower ionization than the E region are sometimes detected, but only when the E region happens to be absent for some exceptional reason. The limitation of the method is that if there should be a region of low ionization above a region of high ionization it will remain undetected. There is a kind of ledge on the F region: as the frequency is raised the ionization is shown to increase rapidly, then not so rapidly for a while, then rapidly again. The activity of the ionization of these levels varies with the times of day, for it is produced by the ultra-violet light of the sun. It is greatest at noon and falls off towards sunset, the minimum being reached about midnight. Ionization starts to build up an hour or so before ground sunrise, when the light is already reaching the sky sixty or a hundred miles up. The activity is greater in summer than in winter, and probably also follows the "sun-spot cycle" of eleven years, over which the sun's rays reach a maximum and minimum intensity. Sometimes quite unexpectedly high values are detected: three or four times the normal ionization for the region, and sometimes a powerful E region appears in the middle of the night. This nocturnal activity seems to be due to some kind of radiation which is bent round the curve of the earth by the magnetic field, and the abnormal intensity sometimes recorded in the summer may be due to thundery conditions. During the last few weeks these values have often been noted. It is obvious that progress in this, almost the latest branch of physical research, must be very significant for the perfection of imperial wireless communication.

**A.A. London Route Map**

For the motorist who requires assistance when driving into or out of London, or for traversing the metropolis in any direction, the Automobile Association has issued a route map covering an area of twenty miles square. The scale is one inch to the mile, and it has been found possible to name all the streets shown so that they are readily identified, and the routes are classified into "London Exits," "Recommended Routes," and "Lesser Roads." In view of their importance as landmarks, bridges, level crossings, golf courses, war memorials, railway stations, tramlines, etc., are specially indicated, while the Ministry of Transport numbers are given. Any motorist may obtain a free copy on request from the A.A., Fanum House, New Coventry Street, W.1.

**A Warning**

The local police ask us to publish a warning notice about a man who is visiting doctors in the Manchester area requesting them to subscribe to an ex-service men's athletic sports club, with which is associated a team of boy scout boxers. The literature that he presents is cyclostyled, and if carefully looked at is obviously faked. The police and the different ex-service organizations are anxious to stop him, and any practitioner whom he visits would do well to notify the police.

**Vacancies**

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 40, 41, 42, 43, 44, 45, and 48 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 46 and 47.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 23.