Agricultural Officer and Secretary to the Agricultural Committee, County Hall Annexe, Kingston-on-Thames (August 4). Inspectors under the Ministry of Agriculture and Fisheries for the purposes of the Diseases of Animals Acts 1894–1925—The Secretary, Ministry of Agriculture and Fisheries, 10 Whitehall Place, S.W.1 (August 9). A lecturer in agriculture at the Agricultural Institute, Plumpton—The Director of Agriculture, County Hall, Lewes (August 10). A lecturer in pathology at the Welsh National School of Medicine—The Secretary, University College, Cardiff (August 21). A senior metallurgist under the British Cast Iron Research Association—The Director, 75 New Street, Birmingham (August 27). A reader in physics at King's College, Strand—The Academic Registrar, University of London, South Kensington, S.W.7 (September 17). A male junior assistant under the directorate of explosives research of the Research Department, Woolwich—The Chief Superintendent, Research Department, Woolwich, S.E.18. A taxidermist for Public Museum—Prof. Carr, University College, Nottingham. A physics mistress at the Cowley Girls' School, St. Helens—The Secretary to the Governors, 17 Cotham Street, St. Helens.

Our Astronomical Column.

JULY METEORS.—Mr. W. F. Denning writes: "A few observations were made at Bristol between July 12 and 22, but meteors seemed somewhat scarce. The coming Perseid shower gave evidence of its presence on July 13 and 16, and several rather bright meteors were seen, presumably from radiants near α and ζ in Cygnus. These are well-known showers at about $314° + 48°$ and $317° + 31°$ and appear to be pretty regular in their annual returns. On July 16 and 20, meteors were recorded from a shower directed from a point near α Capricorni ($304° - 12°$). A rather fine object, belonging probably to this stream, appeared on July 20, $2^h\ 25^m$ G.M.T., moving along a path of about 45° approximately between Jupiter and Mars and towards Mars. This meteor was seen by an assistant, who pointed out the position, but no other observations have as yet come to hand. This shower of Capricornids is one of considerable activity and seems possibly connected with comet 1881V. Its meteors were numerous in 1908 and 1916, but their chief abundance seems to occur a fortnight before the earth's nearest approach to the comet's orbit."

CHANGES IN THE EARTH'S RATE OF ROTATION.—Prof. Newcomb was the first to suggest that the unexplained oscillations in the moon's position might really be changes in the earth's rotation. Support was given to the suggestion by Glauert, Innes, and others, the test being that other rapidly moving bodies should show similar oscillations, agreeing in phase but differing in amplitude proportionally to their motion.

Prof. E. W. Brown contributes a paper to the *Proc. Nat. Acad. of Sciences*, U.S.A. (June 1926), on the subject. He strongly supports the hypothesis, finding, *inter alia*, confirmation from the observations of the sun: there has been a marked deviation from the tables since 1900, which now amounts to 1″. He considers that an oscillation in the earth's radius appears to be the only way of producing such changes in the rotation. Such oscillations were already postulated by Joly ("The Surface of the Earth"), but these are of much longer period than those required for the present research. The chief unexplained lunar term has a period of some $2\frac{1}{2}$ centuries, found by Prof. Turner to be about the same as a period indicated by Chinese earthquakes. The amount of oscillation in the radius required by Brown lies between 5 inches and 12 feet according to the depth of the source, which he estimates to be at least 80 kilometres.

MUTUAL ECLIPSES OF JUPITER'S SATELLITES.—Once in six years the orbit planes of Jupiter's satellites are turned edgewise to the sun, and mutual eclipses of one satellite by another occur. These phenomena have very seldom been observed, for they last so short a time that, unless notice is given beforehand, they are likely to escape detection. The Computing Section of the British Astronomical Association has now undertaken the computation of these phenomena, and gives lists of them for June, July, and August in the March and April issues of its journal. Unfortunately, after July 6, none is visible in England until Aug. 4, when III. is eclipsed by II. at $21^h\ 28^m$. Mr. B. M. Peek described at the June meeting of the Association his observations of three of these phenomena. On June 17, I. was partially eclipsed by II.; at mid eclipse their magnitude was equal, I. having been $\frac{1}{4}$ mag. brighter before eclipse. On June 23, III. was eclipsed by II., the loss of light being very appreciable, so that III. became equal to II. On June 28 there was an annular eclipse of II. by I., of very brief duration, since the motion of the satellites was in opposite directions. Fading began at $23^h\ 46^m\ 15^s$, centrality occurred $23^h\ 46^m\ 45^s$, and II. suddenly brightened at $23^h\ 47^m\ 10^s$.

THE REFLECTION EFFECT IN ECLIPSING VARIABLES.—In some cases of eclipsing binaries the light is not constant during the period between two eclipses, owing to reflection of the brighter star's light by the secondary. The hemispheres of the fainter stars facing and remote from the primary are of unequal luminosity and produce a well-recognised effect on the light curve of the system. The theory of this reflection effect is discussed by Eddington in the *Monthly Notices, Roy. Ast. Soc.*, vol. 86, p. 320 (March 1926). He considers primarily the case of the reflection of heat energy, which is greatly simplified by the fact that the 'heat albedo' = 1 (*i.e.* a star re-emits completely the radiation falling on it). The phenomenon considered in the theoretical case is not strictly one of reflection, but of absorption and re-emission of radiation, and the conclusions obtained are translated into terms of light reflection by means of simple assumptions. It is shown that the 'reflection' coefficient for heat will not be greater than that for light, and calculated theoretical values are compared with observed values of the reflection effect, in the case of systems of known orbits. Good agreement is shown between the calculated heat reflection and the observed light reflection in seven systems out of twelve, and (contrary to expectation) in only one case is the light reflection the greater of the two. The assumption that the incident radiation is re-emitted in amalgamation with the natural radiation of the fainter star as black body radiation would imply a large increase of the luminous efficiency of this star. The absence of this effect in observed systems suggests that the incident light retains its original quality after 'reflection.'