Diabetes: Pernicious Anaemia.

Mortality rates for diabetes—91 for males and 101 for females—were higher than in the previous year. The rate for males was the highest since 1922 (101) and that for females since 1915 (104). Since the introduction of insulin the mortality among males under the age of 55 had been reduced up to 1928 by 37 per cent., and that of females by 21 per cent. At 25 to 45 years the rate for males had fallen by 45 per cent. The effect of this large reduction, however, was masked in the total death rate by the concurrent increase of mortality at ages over 55. No indication is given by the death returns that insulin had had any effect in reducing the mortality in later life. It would seem that as phthisis mortality decreases that from diabetes increases, the latter being apparently a disease of prosperity and the former of adversity.

Satisfactory improvement is recorded in the mortality rates from pernicious anaemia, presumably as the result of the new liver treatment introduced in the later part of 1927. The standardized rates for males fell from 44.50 in 1921-27 to 30 in 1928, and that for females from 54.61 to 39. The number of deaths from pernicious anaemia, however, was proportionately higher than from all causes jointly at the ages of 45 to 75 in each sex; from the ages of 55 to 65 the excess was 110 per cent. for females and 72 for males. Owing mainly to more frequent certification of degenerative conditions the mortality from heart disease was higher than in the previous year. Standardized death rates for diseases of the respiratory system were the lowest on recent record at all ages and for both sexes.

Deaths ascribed to pregnancy or childbirth numbered 2,920, corresponding to a rate of 4.42 per 1,000 live births. Including associated mortality the proportion was 5.62. As in the preceding year a notable feature was the low mortality in London from septic and other causes. The rate for Wales during 1919-28 was uniformly above the average for England and Wales to an extent varying from 19 to 43 per cent.

The 656 deaths under or connected with the administration of anaesthetics exceeded the number for 1927 by 60, and was more than double that of any year prior to 1916. Of the total, 102 were associated with cancer and 38 with hernia.

POPULATION.

At June 30th, 1928, the total population of England and Wales was estimated to be 18,896,000 males and 20,586,000 females. The population was assumed to have grown by 4.2 per cent. over the period since 1921, representing an arithmetical average increase of 0.60 per cent. per annum, compared with 0.49 per cent. per annum during the decade 1911-21. The sex inequality, expressed as 1,096 females per 1,000 males in 1921, was reduced to 1,089 females per 1,000 males in 1928. According to the estimated age distribution the average ages of the mid-1928 population was 31.1 and 32.7 for males and females respectively, compared with averages of 29.9 and 31.2 at the last census. The live births registered in 1928 numbered 660,267, corresponding to a birth rate of 16.7 per 1,000 of population. This slight increase is regarded as a reaction from the more than usually depressed rate of last year and of no permanent significance. The proportion of male to female births was 1,044, 1,041, and 1,044 to 1,000 for legitimate, illegitimate, and total births respectively. Live births exceeded deaths by 199,878, compared with 169,563 in 1927; this rise in the natural increase figure is attributed mainly to the fall in the death rate during a period in which the regular fall in the birth rate was temporarily interrupted. The birth rate in this country attained its highest values during 1865-1880, when it exceeded 35 per 1,000 population; from that time it diminished by gradual and almost continuous stages to 23.8 in 1914. The rate of natural increase—4.3 per 1,000 of population in 1927 and 5.0 in 1928—was lower than that of any earlier recorded periods with the exception of the war years. It may be inferred from a study of the series that even if the fall in the birth rate continues, the number of births will exceed the number of deaths for some years, and that apart from the results of migration, the population will go on increasing, though at a somewhat slower pace. Mere excess of births over deaths, however, does not imply that the perpetuation of current conditions of fertility and mortality would be sufficient to ensure a continuous increase in the national population both now and in the remote future.

MOTOR DRIVERS AND VISION.

BY

N. BISHOP HARMAN, M.A., M.B., F.R.C.S.

ON November 13th Mr. Herbert Morrison, Minister of Transport, announced that it is proposed to bring Part I of the Road Traffic Act, with the exception of certain small sections, into force on December 1st. The Regulations to be put into force on this date that will most concern the private owner are those affecting the issue of licences to drive. The new form of application for a driving licence contains a declaration as to the physical fitness of the applicant.* Three specific questions have to be answered. The second of these reads:

Are you able to read at a distance of 25 yards, in good daylight (with glasses, if worn), a motor car number plate containing six letters and figures?

An applicant who replies "No" to this question is debarred from obtaining a licence.

It is evident that the prospective driver may take advantage of the best of the conditions offered. He will choose a clean, clear number plate, and preferably one with the letters painted white on a black ground, and not one with polished metal letters and figures which give disturbing reflections. He will choose good daylight, and neither the glare of sunshine nor the dimness of the dusk. He will use glasses if they help him. If he can read these letters at the required distance, and fulfils the other conditions, he may drive. Since nothing is said about "eyes" there is no ban upon the one-eyed man.

The letters and figures of a motor car number plate are prescribed in the Statutory Rules and Orders, 1930, No. 277, Fourth Schedule, paragraph No. 4:

All letters and figures must be three and a half inches high, every part of every letter must be five-eighths of an inch broad, and the total width of the space taken by every letter or figure, except in the case of the figure 1, must be two and a half inches.

The prescribed size is practically that of the usual top letter of a Snellen's test card marked D.60. It is the letter which the person with "normal" vision will read at 60 metres. Since the candidate for a driving licence is only required to read at the distance of 25 yards, the letters which the "normal" sighted read at 60 metres, or 65.616 yards (taking the metre as 39.37 inches), the requirement of the Regulations cannot be held to err on the side of severity.

Vision satisfactory for driving safely is compounded of many factors. So far as acuity is concerned, it implies the ability of the driver to recognize objects in the street, and to recognize their detail distinctly enough to be able to judge signs of movement. One of the best comments on the necessity for good visual acuity I have heard was put thus: A distinguished public servant said, "When I drive I am not content to be able to see a child on the roadside; I wish to be able to see the position of the child's limbs and the expression of his face, so that I may judge of his probable movements, and drive accordingly."

Prospective drivers who find they cannot see the letters at the required distance will probably apply to ophthalmic surgeons for advice. It is with the examination of the sight of such applicants in the consulting room that I propose to deal. We shall need to make out subjective tests upon Snellen's test cards. It would be inconvenient to make them in the open street.

Tests of Visual Acuity.

Ophthalmologists are in the habit of recording the visual acuity of a person examined in the form of a vulgar fraction—a convenient but misleading practice. A person reading the letters of a number plate of a car at 60 metres would be recorded as having 60/60 vision, for he reads the 60 metre line at 60 metres. This is equivalent to our common standard of 6/6, when the vision is taken at the convenient consulting-room distance of 6 metres. Recording the visual requirement of the Regulations in the same form, the ability to read at 25 yards the letters which those with normal visual acuity can read at 65.616 yards would be 25/65.6. If these figures of distances in yards be

* See *British Medical Journal*, November 22nd, 1930, p. 884.

converted into metres according to Snellen's scale, the acuity would read 6/15.74. That is an acuity nearly midway between the common 6/18 and 6/12. I know of no test cards with a line of letters or figures of either 6/16 or 6/15 upon them, but it would not be difficult to construct such lines. The letters required would measure 22.7 mm. in height, as compared with 6/18 of 26 mm. and 6/12 of 17.5. If the surgeon has not provided himself with such lines of letters he can get an approximately equal measure by requiring his patient to read 6/18 promptly and correctly, and at least half the letters shown in 6/12 lines.

Muscle Balance and Light Sense.

When a patient consults an ophthalmic surgeon on the state of his vision and its sufficiency for driving, it is certain that the surgeon should not confine his examination to visual acuity, though that only is recognized by the Regulations. The patient's muscle balance, his light sense, and the effect of the form of the lenses needed to obtain good acuity will come into consideration, and to some extent colour vision also.

Defect of muscle balance likely to cause diplopia in states of fatigue will require caution. In lower degrees of defect the driver will not be likely to be unsafe, but he should be cautioned against lengthy drives, or driving when not in good health. In higher degrees of defect with frequent symptoms of diplopia there will be added risks, unless the defect can be satisfactorily corrected, or the driver learns to drive with one eye only. It is certain that a driver with diplopia should not drive with both eyes open. Most people with this defect are wise enough not to attempt to drive.

A good field of vision is of the highest importance, not only to the driver, but for all forms of locomotion. A loss of 20 to 30 degrees of the peripheral field renders the subject liable to bump against foot passengers as he walks abroad, and he is certainly unsafe to drive. I have never found a patient with this defect who did not recognize his disability for driving.

Light sense is of importance in night driving, and in this connexion it is convenient to consider the effect of the form of lenses required to give good visual acuity. Myopes, especially those with high degrees of defect, are conscious of their poor vision in the dusk. The form of their lenses disperses the rays of light and reduces the light received by the eyes. The deficiency, both for the myopes and for those whose defective light sense is purely retinal, can be recognized by the use of the perimeter. If the peripheral field be mapped out in good daylight, and then again after the adjustment of the window blinds, so as to reduce the illumination to one-tenth of the full light, the reduction of the field of vision will be evident and demonstrate the risks of the disability. Subjects of these defects will be safe drivers in the daytime, but at night they may be dangerous. Mostly they recognize the defect and avoid night driving.

Traffic Signals and Colour Vision.

Defects of colour vision should not constitute any disability for driving either by day or by night. But the growing practice among local authorities of placing coloured signal lamps at road crossings has introduced a real difficulty for the colour-blind. Signal lamps of red, yellow, green, and white are springing up everywhere. A mistake in reading one of these signals may bring the colour-blind driver into conflict with the police, and possibly into collision with other drivers or pedestrians. There is no

excuse for the lack of thought displayed in the design of these new road signs. It would be just as easy for the authorities to make the signals recognizable by shape as by colour. They need three signs, for "Stop," "Caution," "Go." If these signs were arranged upon a uniform plan, with a horizontal bar of light for "Stop," a circular light for "Caution," and a vertical bar of light for "Go," they would be more easily recognized by all.

The lights might be coloured, or not, as the authorities thought pleasing, but the shape would be the determining character.

The advice we may think well to give to our patients upon the state of their eyes and vision, apart from the degree of visual acuity, and their ability to pass the standard set by the Regulations, is outside the scope of this note. But my experience leads me to believe that advice given in the patients' interests will be well received. Intelligent patients are anxious neither to endanger their own lives nor the lives of others by taking risks that conditions prevent them from controlling.

PUBLIC HEALTH CONGRESS.

SIR ARTHUR NEWSHOLME AND THE INSURANCE MEDICAL SERVICE.

At the first of the sessions of the Public Health Congress, held at the Royal Agricultural Hall, London, from November 17th to 22nd, an address was given by Sir ARTHUR NEWSHOLME (formerly Principal Medical Officer to the Local Government Board) on the subject of "Medicine and the State."

Sir Arthur Newsholme covered a wide range of discussion in reviewing public health medical activities, and laid down certain generally accepted postulates concerning medical services needed for the mass of the population, but subsequent speakers almost entirely concentrated on his criticisms of the insurance medical service. In speaking of voluntary hospitals, he said that, unhappily, in many areas these continued to treat out-patients for whom there was ample medical provision by panel doctors. He also stressed the abuse of out-patients by the voluntary hospitals. "The vast economic loss of working hours for men and of domestic work for women implied in present conditions would, if capitalized, pay—as is most desirable—salaries to an increased staff of junior hospital physicians and surgeons, who would then be honourably bound to attend at stated hours, and for whose patients an appointment system could be arranged, which would prevent the perfunctory and hasty work now too common." Speaking with regard to tuberculosis dispensaries, he considered that in so far as clinical work was done there, responsibility should ultimately revert to medical practitioners in family practice. It had been an unfortunate result of the panel system as now operating in this country that private individual medical responsibility had been too readily abandoned. One postulate which Sir Arthur Newsholme laid down was that it was dishonest to assume or continue responsibility for the treatment of a patient unless one had sought to obtain accurate knowledge, determined by detailed examination of his physiological systems, of the patient's fundamental conditions of health. This applied to some panel and other private medical practitioners, as well as to much dispensary work, and he thought it should be a condition of receiving an insured person on his list that the doctor should act in accordance with this postulate, besides acquainting himself with the occupational or other risks of his client's life. If this condition of honest medical practice were met it would lift the panel practice of a large minority of the medical profession out of "its present quagmire of dangerous superficiality. Incidentally, it ought to go far to reduce the present extravagant prescription of unnecessary drugs; for a doctor's prescription is often a mere placebo, covering sometimes an incomplete diagnosis, the completion of which was attainable, and covering perhaps oftener the waiting and watching period before a diagnosis is practicable."

The speaker dealt severely with the conditions of insurance medical practice in this country. The fact that the Insurance Act had become a permanent part of social machinery, notwithstanding its many flaws and especially its "propping up an already obsolete type of medical practice," was remarkable testimony to the genius of the civil servants who made it workable, though at an expense entirely disproportionate to the benefits received. The defects on the medical side were obvious; the most serious of them was the absence of consultative services, the usual failure to provide hospital treatment when needed, and