If the skin of the hands is stained, an endeavour may be made to remove as much of the stain as possible by pumice, and by washing with the alkaline solution.

Treatment of the Dermatitis.

When the eruption has developed, the parts should be washed as little as possible, but the alkaline solution may be used without risk. I have found that the best local application is a liniment of calamine (calamine 70 grains, lime water 1 oz., olive oil 1 oz.). This rarely fails to allay irritation and to promote healing. If the parts become septic, the usual remedies are of service, and in a very bad case I found that spraying the parts daily with a malachite-green sublimate solution was of great value. The solution, which we owe to McIntosh and Fildes, is made as follows: Malachite green 1 part, hydrarg. perchlor. 0.5 part, spirit. vin. rect. 100 parts.

CAUSATION.

The substance which is the cause of the dermatitis appears to be hexa-nitro-diphenyl-amine. The phenomena are identical with those caused by aurantia, an orange dye (ammonium hexanitrophenylamine) which has been used for the dyeing of cheap brown shoes and other leather articles. In Prosser White's *Occupational Diseases of the Skin*, p. 99, "aurantia, emperor's yellow," is described as "a basic aniline azo dye," which causes an abundant uniform-sized crop of vesicles, thickly crowded together all over the palm. Cases were recorded by Radcliffe Crocker,⁶ whose description of the phenomena of aurantia dermatitis on p. 417 of his textbook on *Diseases of the Skin* (third edition) tallies exactly with the appearance and symptoms which have been observed in the cases now described.

The use of the substance was prohibited in Germany, and it is not used on either silk or wool in this country. In Thorpe's *Dictionary of Applied Chemistry*, vol. i, p. 340, it is stated that, according to Gnehm (*Ber.*, pp. 1246, 1557) and Bayer and Co. (*W. J.*, 1877, 879), aurantia produces skin eruptions. Martius contends that this effect is due to idiosyncrasy, and quotes the opinion of Salkowski and Ziureck in support of his statement. The ministerial order of November 8th, 1877, prohibiting its manufacture was cancelled in June, 1880.

I understand that hexa-nitro-diphenyl-amine is recognized as an explosive substance, and that it is combined with trinitrotoluene in the bombs which have been used in the recent air raids in this country.

I hope to be able to report later on some experiments which are being made with the substances in question, and would gratefully acknowledge the assistance afforded me by the officials of the Ministry of Munitions and the Medical Research Committee.

REFERENCES.

- ¹ J. W. Tyson, *BRITISH MEDICAL JOURNAL*, July 14th, 1917, p. 45.
² H. G. Adamson, *ibid.*, p. 45. ³ J. M. H. MacLeod, *ibid.*, July 21st, p. 80. ⁴ G. W. Sequeira, *ibid.*, p. 80. ⁵ P. N. Panton, *Lancet*, July 21st, 1917, p. 81. ⁶ Radcliffe Crocker, *ibid.*, 1903, vol. i, p. 491.

STATISTICS OF DEFECTIVE VISION OBTAINED AT A RECRUITING MEDICAL BOARD.

BY

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THE medical examination of the adult males of the country who are of military age affords an opportunity for inquiring into the incidence of disease which has never previously been obtained. In particular the ophthalmic centres attached to the recruiting medical boards have given facilities for estimating the relative frequency of ophthalmic disabilities in the different areas, which may be of some general interest and which should be of value in determining the suitability of different candidates for military service.

The accompanying table, prepared from the statistics of one ophthalmic centre for a period of six months, from June to November, 1916, may now be considered. At the outset it may be stated that the region from which the men were drawn included thickly populated suburban districts, country towns, and extensive agricultural areas, together with a few of the smaller manufacturing centres.

Table showing 2,640 Cases of Defective Vision seen at an Ophthalmic Centre between June and November, 1916.

1. Myopia :			
(a) In categories B 1 and C 1	...	...	951
(b) In categories B 2, B 3, C 2, C 3	...	...	523
(c) Classified as unfit	...	...	73
2. Hypermetropia :			
(a) In categories B 1, C 1	...	...	123
(b) In categories B 2, B 3, C 2, C 3	...	...	153
(c) Classified as unfit	...	...	2
3. Amblyopia	...	...	354
4. Corneal opacities	...	...	141
5. Traumatic cataract	...	...	119
6. Congenital cataract	...	...	44
7. Enucleation of eyeball	...	...	76
8. Fundus defects :			
(a) Choroido-retinitis	...	...	20
(b) Detachment of retina	...	...	9
(c) Retinitis pigmentosa	...	...	6
(d) Progressive optic atrophy	...	...	11
9. Night blindness, without special fundus changes	...	...	3
10. Iritis	...	...	6
11. Nyctagmus	...	...	21
12. Miscellaneous :			
(a) Vitreous opacities	...	...	2
(b) Chronic glaucoma	...	...	1
(c) Ocular paralysis with diplopia, etc.	...	...	2
			2,640

The period is one of six months, and includes the time during which the men were called up who had been previously rejected for military service as being below the standard adopted in the British army for general military service. All the cases examined were those who were below this standard or who had been referred for ophthalmic examination on account of certain obvious defects. From this it will be seen that many cases of minor errors of refraction, or even some of graver eye troubles, may have been passed for general service if they possessed the visual acuity of R. $\frac{5}{24}$, L. $\frac{5}{60}$, which satisfied the military requirements for general service during the greater part of the period dealt with.

No attempt has been made to estimate the proportion of defective eye cases to the adult male population in general, for by far the larger part of healthy adult males had already been passed into the army, so that in these later months there has been a far larger proportion of defective cases, from whatever cause, many of these having been rejected in the earlier months of the war and being brought up again for examination and possible classification in some of the categories below that for general service. I will now discuss in detail some of the causes of disability which seem to be of greatest importance.

1. *Myopia*.—It will be seen that by far the most important question is that of myopia. Those who are affected by this refractive error are divided for convenience into three classes :

- Those whose defect can be corrected by glasses so as to fit them to shoot.
- Those who are below the standard for shooting but who might be fit for labour or sedentary work.
- Those who are unfit for any military service.

(a) The large number who are included under this head, nearly one-third of the total of cases of defective vision, indicates the importance of securing these men for service in the army. A considerable proportion of these could read $\frac{5}{6}$ with glasses, and the general standard adopted for this class was a visual acuity of not less than $\frac{1}{2}$ in the right eye after correction with less than -6 D. In the chief armies of the Continent these men would be accepted for the regular army.

(b) The next class includes those who could be corrected sufficiently with - glasses, such as were supplied during the period under review at Government expense (namely, a maximum of 6 D. spherical with + 4 D. cylindrical), if these would enable them to do labour or sedentary work. Some latitude has been granted recently to officers in charge of ophthalmic centres to order stronger glasses. No hard-and-fast standard was adopted in these cases, a decision being based largely upon the previous experience of the individual recruit. This class formed more than a fifth of the total, and if these are added to the total of the previous class the number of myopic cases

who could be selected as fit for some form of military service after correction amounted to more than one-half of the total of cases of defective sight.

(c) Only sixty-five cases were classed as unfit for any form of military service as a result of myopia.

2. *Hypermetropia*.—Cases included under this heading were again divided into classes (a), (b), and (c), as in the case of myopia. Before, however, commenting on these figures certain explanations should be made. It is obvious that a large number of men having slight degrees of hypermetropia would pass the War Office standard for general service, and therefore were not referred for special ophthalmic examination. On the other hand, a considerable proportion of cases included under the head of amblyopia were those in which one eye was amblyopic as a result of hypermetropia, and in many cases associated with strabismus. It will be seen, therefore, that the figures given do not afford an exact statement as to the incidence of hypermetropia among adult males in the same way as myopia. We may now deal with the subdivisions mentioned above:

(a) Only 123 cases were placed in the higher categories (B 1 or C 1) after the correction with convex glasses, and when this is compared with the similar figures under the heading of myopia, it appears comparatively insignificant. The fact is, as already explained, that most of the lower forms of hypermetropia are not likely to be a hindrance to general service even without the use of glasses. This no doubt accounts for the fact that the Continental armies seem to pay little attention to hypermetropia. If it is small it is of little significance; if it is high, the use of glasses is not likely in many cases to render the individual fit, at least for shooting units.

(b) A rather higher proportion of cases, 153 in all, were placed in the lower categories (B 2, B 3, C 2, C 3), in which great accuracy of vision may not be required, or in which clerical work could be performed with suitable correction.

(c) Only two cases were definitely classified as unfit on account of high hypermetropia. This is explained partly by the fact that even in the higher forms of hypermetropia examined the men were in most cases fit for some sort of military service with correction. It must also be remembered that some of these were included under the head amblyopia.

3. *Amblyopia*.—This heading is of no scientific importance, though it cannot be omitted from notice, as it helps to explain the inadequacy of the figures included under hypermetropia. By far the larger proportion of these were cases in which one eye was amblyopic as a result of hypermetropia, a few being due to myopia, and in many cases the amblyopia was associated with strabismus. No case of toxic amblyopia was noted.

4. *Corneal Opacities*.—One hundred and forty-one cases were recorded of opacity of the cornea in which this condition produced serious defect of vision in at least one eye, and it was only in a small number that both eyes were affected. Cases of obvious total blindness from corneal or other defects did not appear before the Board. Some cases of interstitial keratitis and of corneal ulcers still in an active stage were included in this series.

5. *Traumatic Cataract*.—This accounted for 119 cases, most of which had undergone some operative procedure. In nearly all cases there was no useful vision in the damaged eye, but the eye was quiet, and if the other eye had good visual acuity they were accepted for modified service.

6. *Congenital Cataract*.—This condition accounted for 44 cases.

7. *Enucleation of Eyeball*.—There were 76 cases in which one eye had been removed, usually, if not in all cases, as the result of injury.

8. *Fundus Defects*.—There were 20 cases of choroidoretinitis, 9 of detachment of retina, 6 of retinitis pigmentosa, and 11 of progressive optic atrophy. Defects due to myopia are not included under this heading. Probably there were numerous minor defects not seriously affecting vision, or at least in which the minimum requirements of the army were satisfied, so that there was no call for detailed examination.

9. *Night Blindness*.—In addition to the cases of retinitis pigmentosa there were three cases of night blindness in whom no fundus disease could be detected. These were cousins belonging to a family in which the condition only affected males and had been transmitted through females

from grandparents, the intermediate generation having been omitted. There were also three brothers with high myopia, one of whom had also some lens opacity, who had to be led from their work after dusk.

10. *Iritis*.—Iritis, whether recent or of old standing, was only recorded in six cases.

11. *Nystagmus*.—So-called "congenital nystagmus" was responsible for most if not all of the twenty-one cases included under this heading. There was associated defect of vision, and, owing to the exceedingly unsatisfactory results of the enlistment of men suffering from this condition, they were classed as unfit. No instance of "miner's nystagmus" was seen, there being no mining districts in the area.

12. *Miscellaneous*.—Among other defects there were two cases of vitreous opacity, one case of chronic glaucoma, and two cases of ocular paralysis associated with diplopia and other symptoms which rendered them unfit for any military service.

A METHOD OF SUPINATION BY PLASTER.

BY

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At the Military Orthopaedic Hospital, Shepherd's Bush, we see numbers of cases of gunshot wound of the upper limb in which the forearm is held more or less in a position midway between pronation and supination, and passive supination is impossible. This condition is due to the habit of putting up such cases originally either on an internal angular splint or even on a Thomas extension splint without due regard to the preservation of supination, which is notoriously the most difficult movement to restore. I have recently devised a simple and effective means of treating these cases by means of plaster. The plaster is

FIG. 1.

applied over felt (previously stitched together round the limb) and consists of two parts. A few temporary stitches hold the two portions of felt together while the plaster is applied, and are then cut. The upper reaches from the middle of the arm to the middle of the forearm; the lower from the middle of the forearm to just above the heads of the metacarpal bones, a hole being left for the thumb to protrude. On either side of the interval between the two portions pieces of metal (Fig. 2) are incorporated in the plaster. These consist of metal strips $\frac{3}{4}$ in. wide and 3 in. long, one inch of which is turned up at a right angle and the other two inches notched to ensure firmer incorporation in the plaster, the notched corners being turned up to form spikes. One of these is fixed into the radial and another into the ulnar side of the lower part, and two other pieces are similarly inserted into the inner and outer aspects respectively of the upper part. When the plaster is firmly set (next day), pieces of rubber tubing are stretched round

FIG. 2.