symptom-complexes that it is questionable whether in a number of cases they can be accurately separated. It is probable, therefore, that severe recurrent bilious attacks in childhood should be regarded as atypical manifestations of migraine.

It may be mentioned in this connexion that various observers regard migraine as being due to food allergy. Balyeat and Rinkel⁶ are of the opinion that in about 30 per cent. of all patients with migraine, symptoms have developed during the first decade of life, and that many cases of so-called cyclic vomiting may actually be cases of migraine in childhood.

Treatment and Progress

These are being discussed under one heading on account of their interrelationship.

The general lines of treatment adopted may be stated to consist essentially of:

1. The ordering of a low fat diet with liberal carbohydrates. The mother received detailed instructions regarding the types of foodstuffs to be given.

2. The prescribing of luminal, to be given at the time of attacks of severe headache, to children prominently exhibiting this symptom.

In certain cases in which a particular article of food was regarded as a possible causative factor in precipitating an attack, this was eliminated from the diet for a short period. This did not appear to make any difference, nor, in fact, did the giving of such foods seem to cause any particular upset.

One is faced with the greatest difficulty in assessing the effects of treatment and the progress of the children because of the impossibility, already mentioned, of obtaining from the mothers accounts that can be regarded as strictly reliable. Recognizing these difficulties, which are inherent in any study of this type, it is possible to make only the broadest assessment of progress in relation to treatment. Three children were not given any special dietary instructions at all. Of the remaining thirty-seven the patients were dieted for periods ranging from six weeks to twenty-one months, the average duration of the dieting being nine and a half months. Extra sugar as well as very restricted fat was ordered in most cases at the outset; later it was usual only to restrict the fats. Apart from six of the children who had no further attacks from the time of first coming under observation, there remain thirty-four cases for consideration. Of these, twenty-seven improved under dietetic treatment, and the improvement was maintained subsequently when an ordinary diet was allowed. In seventeen of these patients the improvement was regarded as very marked. Three failed to show improvement, and in two cases the improvement was doubtful. Two patients improved under dietary treatment, but regressed when given ordinary diet without fat restriction.

However great the improvement may have been, and even if no attacks were observed while the child was attending, the time of observation hardly permits one to speak of an absolute cure having been effected. There seems, however, to be little doubt that, when children suffering from recurrent vomiting attacks are ordered a diet in which the fats are much restricted, a general improvement is usually effected, and this appears to be lasting.

Summary and Conclusions

A study was made of a series of forty children suffering from recurrent attacks of vomiting, and in particular evidence was sought as to whether or not the attacks were associated with an allergic state.

There was found to be a definite family history of some allergic disorder in a considerably greater proportion of the children in this series than in a second series of

children taken as a control. Apart from this no definite evidence of allergy was found. Generally speaking, skin tests failed to reveal sensitivity to any of the common foodstuffs.

The association in childhood of recurrent vomiting attacks with migraine is emphasized and discussed. Severe vomiting attacks in childhood are probably atypical manifestations of migraine.

Treatment consisted essentially of restriction of fats in the diet. From the generally favourable progress made by these children it would appear that good results may be expected from this line of treatment in the majority of cases, and that the improvement effected is likely to continue after a normal diet has been resumed.

I should like to thank Dr. Panton and Professor Marrack, in whose departments certain of the investigations were carried out, Dr. W. G. Bray for helpful advice, and the Research Committee of the London Hospital, who kindly assisted me with a grant.

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NEW CASES OF WAR BLINDNESS DUE TO MUSTARD GAS

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Surprise is often expressed by the lay public, and sometimes even in medical circles, that men are still being admitted to the benefits of St. Dunstan's organization as being blinded from the results of the war. That there are many men with damage to the brain from bullet wounds, which years later have resulted in injury to the brain tissue from the effects of scarring and traction, is readily understandable; that these changes cause damage to the optic paths and optic centres, and result in blindness, more or less, is also quickly appreciated when an explanation is called for. But such explanations are comparatively rarely required, because the general public thinks that, since the war ended sixteen years ago, any after-effect of head wounds in the way of blindness would have shown itself much earlier.

Numbers of clear, well-authenticated cases of this nature are on record. In this article, however, it is not intended to touch upon these, but upon a variety of war injury which causes an immense amount of untold suffering, years of treatment, and, unfortunately, progressive loss of already much impaired vision, and the occasional loss of eyes themselves. I refer to the men who were badly gassed by shell and cloud mustard gas, and whose conjunctivae, particularly the lower fornices, are as irritable and inflamed to-day as they were after the acute effects had more or less passed off in 1917, 1918, and 1919. Very considerable oedema of the conjunctiva and lids first occurred, which slowly settled down, leaving a chronic conjunctivitis of such nature and severity that one can but conclude that some change in the tissues has taken place resulting in the loss of some lubricating secretion present in the normal eyelids and conjunctivae. This change would appear to be the total destruction of the mucin-secreting glands, a change which seems to have taken place in those distressing cases of essential shrinking of the conjunctiva and xerophthalmia.

In the latter cases, however, corneal ulceration and definite losses of corneal tissue are not a prominent feature, whereas in the gas cases, corneal destruction—thinning, ulceration, and bulging of the weakened substantia propria of the cornea—itself is an ever-present symptom, especially the bulging and the giving way of the cornea.

I did not come across these changes in the early days of the use of gas, when lachrymatory gas, chlorine, bromine, and supposedly hydrocyanic volatiles were used, and I saw and attended the greater number of the gas cases arising during the first and second attacks in the Ypres sector. Uncomfortable and irritating as lachrymatory gas was, the effect upon the eyes and conjunctiva soon passed off, as did that of chlorine, but this latter had fatal effects upon chests, lungs, and bronchi. During these gas attacks there were no protective masks for the eyes, the only available protection being pads of gamgee tissue with tapes, the pad being dipped in thiosulphate of soda such as was then used in the Vermorel sprayers.

In addition to the number of cases in which the men's eyes, previously sound and normal, were directly and acutely burnt by mustard gas, and as a result the men were partly blinded, there have been many cases of old interstitial keratitis, in which the previous disability has been lighted up by the intense irritation and destruction of tissue resulting from mustard gas burning; in some instances both eyes have become affected, although the interstitial keratitis first appeared only in one eye. While it is true that the original interstitial keratitis was not in any sense a war injury, the attack following mustard gas burning was, and should be so considered. There are also cases in which, after extreme burning, some of the mustard gas became absorbed and brought about deeper changes in the eyes, such as degeneration of the retina, presumably following an inflammatory retinitis, which showed itself primarily in night-blindness. (An example of this is included later in this paper.) Such cases have been known to follow heavy doses of phosgene gas, which causes very few local and immediate symptoms, but deadly after-effects; not many have followed mustard gas burning.

Case Notes

The men in the following cases have all come to St. Dunstan's for admission or assistance owing to their wretchedly uncomfortable eye conditions, with progressive deterioration of vision in spite of continuous treatment. Most have lost their jobs through failing vision, and some are unemployable because of the appearance of their eyes, the uncertainty of being able to carry out any work without continual breakdowns for treatment, and, sad to relate, the objection of fellow workers. They have all come up within the last eighteen months.

Case 1.—The patient, aged 38, was seen on July 12th, 1934. He was wounded on the Somme, was in hospital six months, and was then sent back to a Pioneer battalion. He was gassed in 1918 (mustard gas), and, as a result, spent nine months in hospital. His chest was affected. He began to lose his sight after being gassed, and it was for this that his pension was granted. Vision R., largest letter at one foot indefinitely. Vision L., largest letter at six inches indefinitely. Field of vision very contracted. This man was a sniper for two years after going on foreign service. Fundus shows marked retinal degeneration and pigmentation. Cornea and conjunctiva not markedly affected.

Case 2.—Patient, aged 50, seen in April, 1933. As a result of mustard gas poisoning at St. Quentin in August, 1918, he was invalided out, and in hospital from August to November. His eyes have given trouble ever since, and broke down finally in February, 1929. He has been under continuous treatment since he was gassed. Left eyelids have been stitched up since July 15th, 1932, and are still closed. Right partly stitched in September, 1932, and remains so. Vision R. less than 1/60; vision L. still less. Both conjunctivae, when

seen, were considerably congested; right, roughened and discharging; left, cornea still ulcerated. The man is quite unable to get work or to perform it, and is being trained as a blind man. He is under treatment at the Ministry of Pensions Hospital.

Case 3.—This patient, aged 44, who was seen on June 7th, 1934, was gassed by shell at Ypres on September 27th, 1917. He spent seven months in hospital, and has been under treatment ever since. Vision R., 3/60 just; vision L., largest letter at one foot. Right: corneal nebula, opacities on lens capsule, signs of iritis; tension normal, no view of fundus. Left: scarred cornea, raised patches with clear cornea between; eye tender and cannot stand daylight. Eyes and vision have deteriorated lately. He left the Ministry of Pensions Hospital, where he had been an in-patient, just before Whitsuntide of this year. He has been under treatment ever since being gassed, and had to give up his own business on January 26th, 1934. His chest is also giving trouble.

Case 4.—The patient, aged 37, was seen on June 7th, 1934. He was gassed near Albert in 1918, and was in hospital as a result for six weeks, during which time his eyes were completely closed, and he was unable to open them for two weeks. Ulceration continued. Nebulae in lower half of right, and a very dense leucoma down and out in lower half of left cornea. Vision R., 4/60 indefinitely; L., 1/60. Eyes have been inflamed again this year. In this case the gas shell burst in the entrance of a tunnel, in which the man was working a signalling lamp; he thus had the full benefit of the mustard fumes.

Case 5.—A gunner, aged 44, seen in February, 1931, was gassed at Armentières in 1918. Right eye: no perception of light; tension minus; cornea opaque and disintegrated in lower two-thirds, bulging and perforated; anterior chamber collapsed. Iris adherent to wound. Left eye: perception of light, but cannot count fingers. Lower half of cornea opaque and roughened, lens capsule opaque, pupil bound down. This man's body, wherever there was moisture—armpits, thighs, etc.—also burned at the same time.

Case 6.—This patient, who was gassed in France in 1918, was seen on July 26th, 1934. He had never had any comfort with his eyes since he was gassed, nor did he do any further service. His eyes very badly ulcerated; left stitched up for a year. He never goes longer than six weeks without having exacerbation, and has extensive calcareous deposits in both corneae. His own doctor has treated him for his eyes for nine years. Vision R., 2/60 barely; L. less than this. Both corneae hazy, due to dense infiltration masking the whole cornea.

Case 7.—Patient seen on July 26th, 1934. He was gassed (cloud gas) at Villars in 1918, and, as a result, was in hospital from May to December, 1918. Both corneae badly burned; nebulae, calcareous film right; has been under treatment ever since being gassed, and was in a Ministry of Pensions Hospital from 1930 to 1931. Right vision: sees light only—or thinks he does; left vision: 1/60 excentrically with head held very much on one side. Vision is still deteriorating.

These authenticated cases are sufficient to prove that much acute suffering is still being uncomplainingly borne, and all such cases will eventually be cared for by St. Dunstan's organization, and account for the recent admissions.

The first number has appeared of a new journal, *Acta Cancrologica*, published in Budapest under the general editorship of Dr. Paul Gereb. The articles are printed in English or French or German, at the author's choice, each being followed by a summary in all three languages. Publication will continue at intervals of one and two months, the annual set of twelve single or six double copies being bound in one volume. The English agents are Messrs. H. K. Lewis and Co. Ltd., 136, Gower Street, W.C.1, who will be pleased to send particulars of the journal to inquirers. The subscription is £4 for one year, and £2 2s. 6d. for six months.