been associated by the patient with exertion; for this reason, presumably, no special attention was paid to it. Questions put to his mother after his death revealed that the sweats were not related to effort. The only other suggestive feature in his history, also elicited after death, was a single attack of "weakness and shaking of the legs," and no further details of this episode are available. The symptoms as known before death were compatible with essential hypertension, which was presumed to have caused the coronary occlusion.

The cardiovascular syndrome, of which this case is chiefly an example, may occur at all ages, mostly from 20 to 50 (Mackeith, 1944). While in hospital in 1947 the patient showed fairly wide fluctuations in pressure, but they lay within the range of variation recognized in essential hypertension and were unassociated then with other features suggestive of hyperadrenalinism. In the subsequent two years of his life blood-pressure readings were infrequent and showed only minor fluctuations in a sustained hypertension. Williams (1950) states that "patients (with phaeochromocytoma) showing persistent elevation of blood pressure may have all the anatomical and symptomatic complications that go with hypertension." None the less, reports of frank coronary occlusion in such patients seem to be rare, and death has usually been recorded as due to cerebral vascular accident, acute left ventricular failure, and renal or hypertensive failure (Green, 1946; Walton, 1950). Wilkins *et al.* (1950) report a case of myocardial infarction following removal of the tumour, diagnosed by E.C.G. in a man of 22 who survived; Goldenberg *et al.* (1950) report one in which infarction was believed to have occurred two years before diagnosis of the tumour.

The reported series of coronary occlusions in young adults (French and Dock, 1944; Newman, 1946, 1951; Reich, 1948) make only brief reference to hypertension because most of the deaths occurred suddenly in apparently healthy men and few previous records of blood pressure were known: the true incidence of hypertension and its relation to coronary disease in the young is uncertain. Phaeochromocytoma was not found in any of these recorded series.

The size of the heart in hypertensive heart disease seems to depend rather on the duration of heart failure than on the duration or degree of hypertension (Harrison and Wood, 1949). My patient showed gross cardiac enlargement, mainly due to left ventricular hypertrophy developing during his last two years of life, since the x-ray film taken in 1947 showed no appreciable increase in heart size. It is a remarkable feature of the case that there was little evidence of failure before the fatal coronary occlusion which occurred on the cricket field, and the patient had followed a normal working life (including games) up to that time.

I am indebted to Dr. A. P. Prior for the post-mortem report and the photomicrograph; to Professor F. A. R. Stammers for details of the earlier investigations; and to Dr. C. L. Wharton, of Kineton, for the patient's medical record while under his care at home.

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NYSTAGMUS AND OTHER EYE SIGNS IN ACUTE ALCOHOLISM

BY

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Clinicians often find it difficult to decide whether or not a patient is under the influence of alcohol. The difficulty lies in the fact that the physical signs vary from patient to patient and may be different in the same individual when seen in similar circumstances a second time. The suffused conjunctiva, the dilated pupil, and its sluggish or absent reaction to light have long been used to support an opinion that a given clinical picture was due to alcohol, but little has been said of any other eye signs.

In view of this it was decided to examine in retrospect a random selection of 40 subjects, known or suspected to have taken alcohol, in order to discover the number who exhibited nystagmus or nystagmoid jerks. For the purpose of classification nystagmus was regarded as having a slow component in one direction with a fast return to the opposite, which persisted so long as the subject continued to look at the examiner's finger. The nystagmoid jerks, however, were smaller and faster oscillations in which the components were equal in speed and the phenomena lasted for only a limited time but could be re-established by getting the subject to look ahead and then return his gaze to the examiner's finger.

Source of Clinical Evidence

The material was taken from notes made during the examination of persons believed to be driving motor-vehicles whilst under the influence of alcohol. All the examinations were carried out by me, and took place at four police stations in two divisions of the Metropolitan Police District. Each case was examined in the same manner, details of name, age, address, occupation, and relevant medical history being taken. An attempt was made to get a detailed account of how the previous six hours had been spent, with special emphasis on the events leading up to the arrest. This was then followed by a clinical examination. The emotional upset caused by the arrest and subsequent attendance at a police station produced a rapid sobering effect in some cases, which continued through the period of questioning. It was decided, however, in spite of a possible modification of physical signs, to continue this method of approach because without such initial questioning personal contact between the examiner and examinee was impossible and full co-operation in the examination could not be obtained.

Clinical Findings

Of the 40 cases examined 39 freely admitted taking alcohol. One (Case 38) denied it, and was subsequently found to be suffering from the effects of excessive fatigue and extreme chilling after sleeping in the cab of his truck in mid-winter. Of those examined, 37 were civilians and three (Cases 7, 16, and 23) were members of the United States Armed Forces based in England. All save one (Case 13) spoke English; the exception was a Pole, who was examined with the help of an Italian and later a Polish interpreter.

In testing for nystagmus the patient was asked to follow with his eyes the examiner's index finger first to the extreme right and then to the extreme left. Of the 40 cases examined 16 exhibited a lateral nystagmus and a further 13 showed nystagmoid jerks. Ten of the cases with nystagmus were associated with dilated pupils which did not react to light.

An additional five were associated with dilated pupils which reacted sluggishly to light. Case 11, a genial barrow-boy aged 42, exhibited nystagmus and dilated pupils, one of which was fixed while the other reacted sluggishly to light. This man had been examined some four weeks earlier, when his vegetable van had overturned and he had been suspected of being under the influence of alcohol. Then both pupils were dilated and reacted to light and accommodation, but there was no nystagmus.

Of the 13 cases with nystagmoid jerks five were associated with dilated pupils which did not react to light, three had dilated pupils which reacted sluggishly to light, and two had dilated pupils with a normal light reaction. Three cases with nystagmoid jerks had pupils of normal size which reacted to light. Two of these (Cases 27 and 28) had been removed from wrecked vehicles, while Case 29 had been concerned in a robbery and was aware that he faced other more serious charges.

From the tabulated results it will be seen that there was no correlation between the presence of nystagmus and nystagmoid jerks with tachycardia, depression of the temperature, or tendon reflexes. It will be seen, however, that, of the 12 cases exhibiting Rombergism, six were associated with nystagmus, five had nystagmoid jerks, and only one (Case 31) was seen without such eye movements. Nine of the cases failed, with their eyes closed, to touch their nose with the right index finger. Of these seven had nystagmus and two nystagmoid jerks. Failure of the index-finger-to-nose test and Rombergism were found together in six cases, four of which had nystagmus and the remaining two nystagmoid jerks.

In the series there were three cases with dilated pupils which did not react to light and one with dilated pupils and sluggish light reaction that had neither nystagmus nor nystagmoid jerks. When these were considered in greater detail two factors became evident—their age and their drinking habits. Case 30, aged 34, travelled several times a week some 90 miles (145 km.) in his car between two branches of his company. When arrested he was found to have in the back of his car a dozen gin bottles containing from a few drachms to about 2 oz. (57 ml.) of gin. Case 31, a commercial traveller aged 35, admitted being a heavy drinker, declaring

that his thirst was greater than his purse. Case 32, a master builder aged 35 of good education, admitted to being a regular drinker at his club. Case 33, aged 34, an owner-driver of a ballast truck, was a notorious local alcoholic. Among the remaining seven who did not show either nystagmus or nystagmoid jerks were two who, in spite of having no other eye signs save slight inequality in pupil size, were certified as being under the influence of alcohol. These were Case 37, a 42-year-old man who described himself as a spirit drinker, and Case 39, a general dealer aged 45 whose history supported the impression that he was a chronic alcoholic.

Discussion

If we leave on one side those with nystagmoid jerks and normal reacting pupils (Cases 27, 28, and 29), who in addition to having taken alcohol had been exposed to violence and hence may have been subject to other factors, we can see a definite pattern in the result of the cases. First there are 26 cases in which there was nystagmus or nystagmoid jerks with dilated pupils. All but two of these had absent or sluggish reaction to light. The four cases with dilated pupils and absent or sluggish reaction to light but no involuntary eye movements were young alcoholics in their middle thirties. Finally, among those cases not exhibiting nystagmus, nystagmoid jerks, or dilated and inactive pupils were two older alcoholics who, unlike the others in the group, were under the influence of alcohol.

It seems that in most people the taking of alcohol produces either nystagmus or nystagmoid jerks, and this is related to dilatation of the pupil and in most cases to its absent or sluggish reaction to light. It further seems that in young alcoholics there is some interference with these movements, while in older alcoholics this occurs in addition to a possible suppression of the mechanism leading to dilatation of the pupils. Bender and Brown (1948), when examining patients under intravenous "sodium amytal," reported that in alcoholics, instead of getting the nystagmus or nystagmoid jerks seen in non-alcoholics, there appeared a shimmering nystagmus. They concluded that the continued use of alcohol damaged that part of the nervous system responsible for producing nystagmus in response to

Case No.	Nystagmus	Pupil	Reaction to Light	Reaction to accommodation	Conjunctiva	Romberg's Sign	Finger-to-nose Test	Tendon Reflex			Temperature (° F.)	Pulse
								Biceps	Supinator	Knee		
1	N	Dilated	—	+	S	—	Normal	+	+	+	98.6	100
2	N	"	—	—	S	—	"	+	+	+	95.6	104
3	N	"	—	—	S	—	Abnormal	—	—	—	97.6	96
4	N	"	—	—	S	—	"	+	+	+	97.0	100
5	N	"	—	—	S	—	"	—	—	—	97.4	96
6	N	"	—	—	S	++	Normal	+	+	+	95.0	88
7	N	"	—	—	S	—	Abnormal	+	+	+	96.4	120
8	N	"	—	+	S	—	"	+	+	+	96.4	120
9	N	"	—	+	S	—	Normal	+	+	+	97.0	100
10	N	"	—	—	S	—	"	+	+	+	96.0	120
11	N	"	—	—	S	—	"	+	+	+	96.6	80
12	N	"	—	—	S	Rigid	Abnormal	—	—	—	95.0	120
13	N	"	—	—	S	—	Normal	?	?	?	97.4	80
14	N	"	—	—	S	—	Abnormal	+	+	+	96.6	108
15	N	"	—	—	S	—	Abnormal	+	+	+	95.0	104
16	N	"	—	—	S	—	Normal	+	+	+	97.0	100
17	N	"	—	—	S	—	"	+	+	+	96.6	84
18	N	"	—	—	S	—	"	+	+	+	95.6	104
19	N	"	—	—	S	—	"	+	+	—	95.0	100
20	N	"	—	—	S	—	"	+	+	—	97.0	120
21	N	"	—	—	S	—	Abnormal	+	+	+	95.8	112
22	N	"	—	—	S	—	Normal	+	+	+	95.0	120
23	N	"	—	—	S	++	Abnormal	—	—	+	96.2	80
24	N	"	—	—	S	—	Normal	—	—	+	97.0	100
25	N	"	—	—	S	—	"	+	+	+	97.2	120
26	N	"	—	—	S	—	"	+	+	+	97.0	100
27	N	Normal	—	—	S	—	"	+	+	+	96.0	82
28	N	"	—	+	S	—	"	—	—	—	96.0	80
29	N	"	—	—	S	—	"	—	—	—	97.0	100
30	N	Dilated	—	—	S	—	"	—	—	—	97.0	120
31	N	"	—	—	S	—	"	+	+	+	96.0	88
32	N	"	—	—	S	—	"	+	+	+	96.2	84
33	N	"	—	—	S	—	"	+	+	+	96.0	88
34	N	"	—	—	S	—	"	+	+	+	96.6	116
35	N	Normal	—	—	S	—	"	+	+	+	96.6	120
36	N	"	—	—	S	—	"	—	—	—	97.2	96
37	N	Unequal	—	—	S	—	"	—	—	—	95.6	116
38	N	Normal	—	—	S	—	"	+	+	+	96.0	80
39	N	Unequal	—	—	S	—	"	—	—	—	98.0	120
40	N	Normal	—	—	S	—	"	+	+	+	97.0	120

N=Nystagmus. NJ=Nystagmoid jerks. S=Suffused. Sl=Sluggish.

the stimulus of sodium amytal. In the present survey it seems that a similar state of affairs may exist in so far as heavy drinking for a limited period damages or interferes with the nystagmoid reaction to alcohol, while long-standing alcoholism leads to non-dilatation of the pupil in addition to the absence of the nystagmoid movements. It is of interest to note at this stage that Rombergism and failure to perform the finger-to-nose test was, with the exception of Case 31, always associated with nystagmoid movement. That exception was the young alcoholic mentioned above.

Conclusion

The taking of alcohol commonly produces a lateral nystagmus or nystagmoid jerks. This phenomenon is associated with dilatation of the pupils and in most instances with their absent or sluggish reaction to light, but bears no relation to tachycardia, to depression of the temperature, or to the loss of tendon reflexes.

Further, the taking of alcohol in large quantities over a period of years seems to suppress the production of this nystagmus and, if continued long enough, interferes with the dilatation of the pupil and its defective reaction to light. Finally, Rombergism and errors of projection do not occur independently of nystagmoid movement unless there is reason to suspect that the latter is inhibited by alcoholism.

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TERRAMYCIN IN THE TREATMENT OF PNEUMONIA IN CHILDREN

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Since the isolation of terramycin from *Streptomyces rimosus* in 1950, it has been prepared in a pure crystalline form which when administered orally is of low toxicity and has a wide range of antibacterial activity.

The effectiveness of terramycin in the treatment of bacterial pneumonia in children has already been reported by King *et al.* (1950), Potterfield and Starkweather (1951), and others in the United States, and by Wolman and Holzel (1952) in England. There is, however, little evidence that this drug is any more effective than or preferable to penicillin and/or sulphonamide therapy, which was recommended for the treatment of pneumonia in preference to chloramphenicol and aureomycin (Medical Research Council, 1951). Eadie *et al.* (1951) also confirmed that penicillin in the treatment of pneumonia was as effective as aureomycin. Therefore a clinical trial of terramycin and a "standard treatment" of penicillin and sulphonamide was carried out from February to April, 1952, at the Royal Belfast Hospital for Sick Children.

Method

A consecutive series of 63 children admitted with a diagnosis of pneumonia was divided alternately into two groups, one for treatment with terramycin and the other for the "standard treatment." Subsequently five children who developed pertussis and three found to have a primary tuberculous infection were rejected: in three others the

diagnosis was considered to be bronchitis, and these were excluded from the series, as were two infants so severely ill that the trial was discontinued in favour of additional antibiotics.

In the remaining 50 the diagnosis of pneumonia was a clinical one, using the generally accepted criteria confirmed soon after admission by radiograph in all cases except three in which there was only radiological evidence of bronchitis, but which were included on the definite clinical evidence of changes in medium and smaller bronchioles. A pharyngeal swab was taken on admission and cultured. A total and differential white blood cell count was made as soon as possible. A Mantoux reaction either of strength 1/1,000 or 1/100 solution of old tuberculin was completed, being negative in all except two who had received previous B.C.G. vaccination.

Treatment.—The group treated with terramycin received orally 20 mg. per lb. (44 mg. per kg.) body weight per day in four divided doses. The "standard treatment" group was given 0.5 g. of sulphadimidine orally at four-hourly intervals, and 300,000 units of procaine penicillin G ("distaquaine G") intramuscularly at 12-hourly intervals if over the age of 3 years. If less than 3 years 0.5 g. of sulphadimidine was given immediately and 0.25 g. four-hourly with 150,000 units of procaine penicillin G at 12-hourly intervals. Treatment was continued until the clinical condition was satisfactory and the temperature had been normal for 48 hours.

Comparability.—The various factors of importance which influence the course of pneumonia are compared for the two treatment groups in Table I. The severity of the

TABLE I.—Comparability of Treatment Groups

	Terramycin Group	"Standard Treatment" Group
No. of Cases	25	25
Male	16	17
Female	9	8
Average age in years	3.2	2.1
Type of pneumonia:		
Lobar	12	13
Broncho	13	12
No. of severe cases	6	6
Average duration of illness before admission:		
< 72 hours	8	13
> 72 hours	17	12
History of previous chest infection	13	11
Average temperature on admission (° F.)	101.3	102.7

pneumonia was assessed clinically; a severe case was one in which the patient was thought likely to die within 36 hours and required oxygen therapy. The differentiation of bronchopneumonia and lobar pneumonia in children is a difficult one to make. In this series lobar (or segmental) pneumonia was diagnosed when there was clinical and radiological evidence of a localized area of consolidation. Bronchopneumonia was believed to be present when there were generalized signs in medium and finer bronchi and bronchioles, with patchy consolidation clinically and radiologically. Unless such evidence was present the diagnosis was thought to be bronchitis and the case rejected from the series (except for the three instances mentioned above), although it was appreciated that there is little division between a severe bronchitis, bronchiolitis, or an early bronchopneumonia.

Results of Treatment

The effectiveness of treatment was assessed on the duration of fever, the average stay in hospital, the development of complications, and the mortality (Tables II and III). From these results it can be seen that there is no significant difference in the duration of pyrexia or length of stay in hospital for the whole group or for the severely ill cases.

There was one death in the series which occurred in a mongol of 8 months of age who succumbed within three hours of admission.