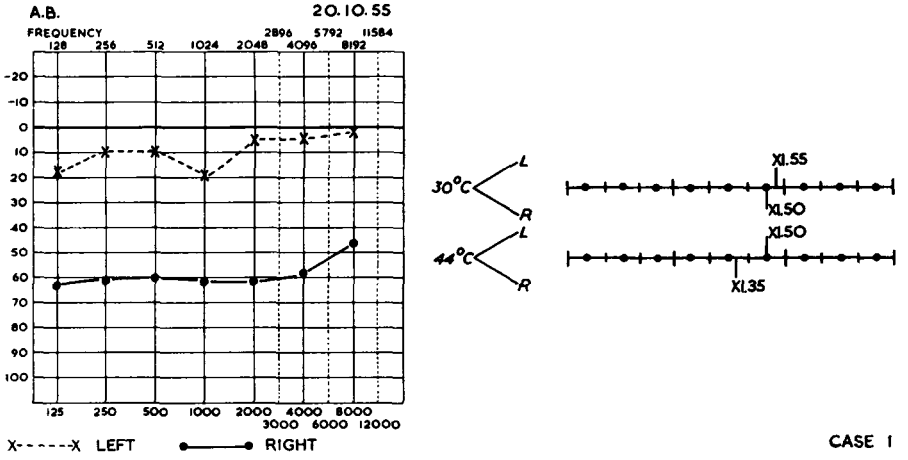
# VERTIGO IN CHILDHOOD

By M. SPENCER HARRISON (Market Rasen)

In recent years vertigo in childhood has often been mentioned in medical articles and isolated reports of cases of one or another form of such vertigo have appeared. The subject is an interesting one and deserves more attention. Although the word "vertigo" suggests by derivation a "turning" it can quite properly be applied to apparent movement in any direction. As a symptom even in adults it is frequently difficult to account for. In children it occurs seldom and is even less likely to fit into an accepted group of clinical findings. The investigation of vertigo demands a history more accurate than many adults seem capable of giving, at least unaided, and a detailed description of the vertigo is often hard to obtain from either child or parent and special examinations such as the audiogram and caloric tests are much more difficult to carry out accurately in the




CASE I

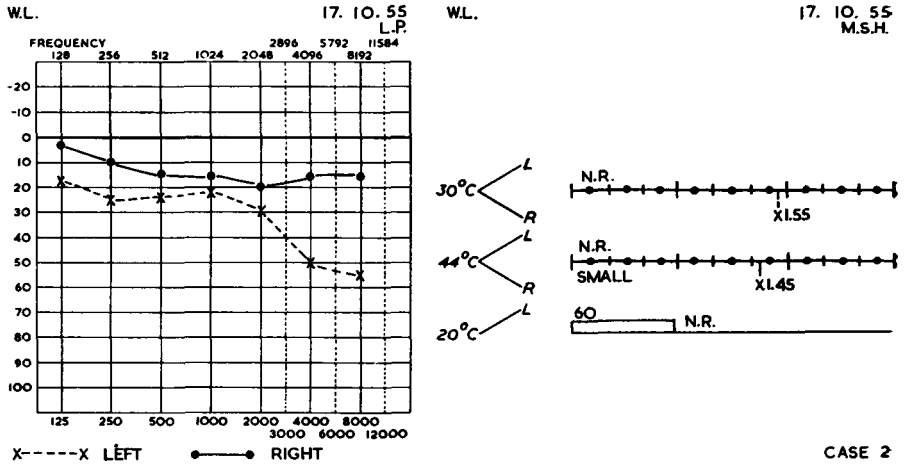
*A.B. Male aet. 14 years. First seen 20.10.55*

At Easter patient became deaf in the right ear rather suddenly and was dizzy one week later. No tinnitus. Had rotational vertigo. Attacks every two or three weeks with vomiting. No head injury. Cerebrospinal fluid normal. No hearing on the right side. Quite fit up to onset of dizziness. Ears, nose and throat normal on examination.

This patient appears to have had a severe lesion of the right inner ear probably of herpetic nature. The caloric tests do not show so severe a lesion as does the audiogram, but the vestibular responses may have improved during the months which elapsed since the illness.



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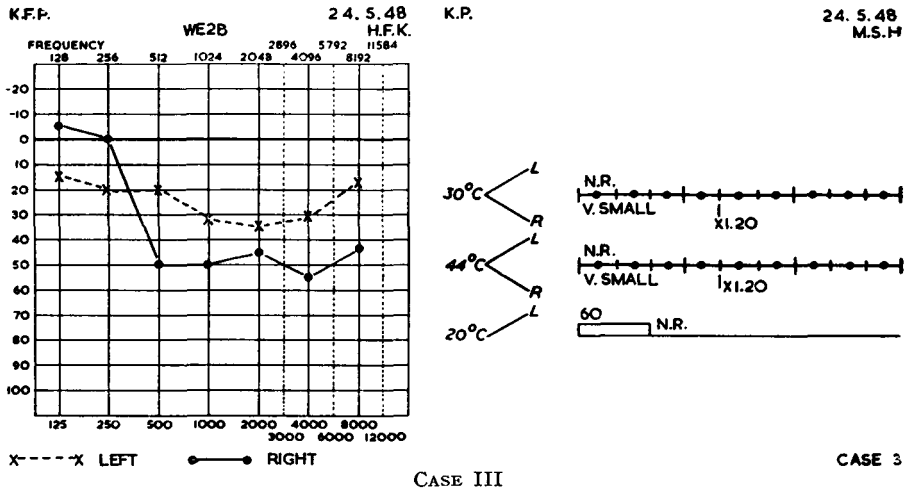

CASE II

*W.L. Male aet. 14 years. First seen 17.10.55*

Attacks of rotational vertigo since age of five years. Three-monthly at first but more often now. No tinnitus. Has been deaf in left ear as long as he can remember. No head injury. W.R. negative. Measles and chicken pox in early life.

Ears, nose and throat healthy on examination. Central nervous system normal. Left and right Rinne positive. Weber to right. No spontaneous or positional nystagmus.

The left labyrinth does not show any response to caloric stimulation and attacks are likely to be the result of the failure of the compensation for the loss of this labyrinth. It is difficult to know whether the hearing loss has any relation to the vestibular lesion, which is likely to have occurred as a result of one of the virus illnesses.




CASE III

*K.F.P. Male aet. 12 years. First seen 24.5.48*

Increasing deafness over five years and short-lived attacks of rotational vertigo over similar period. No otorrhoea and no family history of deafness. Measles at the age of three years but no other illnesses. No tinnitus.

Ears, nose and throat healthy on examination. Corneals active. No spontaneous or positional nystagmus. No Rombergism. C.N.S. no abnormality. Positive Rinne on both sides.

No further dizziness when seen on 13.3.52. Attacks continued a few months after first seen.



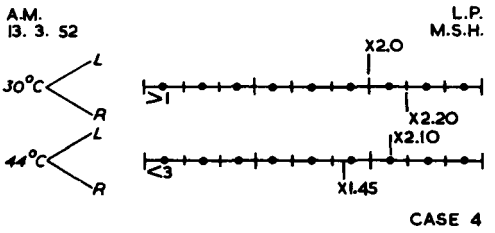
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child than the adult. The "dizzy" child should pass through the paediatric out-patient department before it reaches any other special departments for there is no doubt that most children complaining of dizziness are really suffering from well-known conditions such as a behaviour problem, hypoglycæmia, an imbalance of salt and water, syncope or migraine. Each year a few of these children reach the aural out-patient department. In most of them a careful history and routine examination will show no labyrinthine abnormality, some as in the following illustrative series, may be diagnosed and treated by the otologist.

A small percentage of the cases of vertigo in children are related to infection of the middle ear which may cause a serous labyrinthitis or even active suppuration in the inner ear. But recurrent attacks of vertigo (non-positional in type) appear to arise as the result of a middle-ear infection without either of these changes. Virus lesions of the eighth nerve not infrequently cause vertiginous attacks (Cases I and II). Measles at times damages the labyrinth (Case III).

The vestibular system is undoubtedly vulnerable to certain toxins: a well-known one now is streptomycin and in susceptible cases unsteadiness or even true vertigo of considerable duration may occur even after one dose. Fowler (1948), Dix, Hallpike and Harrison (1949), Hamberger (1949), Cawthorne and Ranger (1957).

In vestibular neuronitis a sudden and often inexplicable loss of vestibular function occurs on one or both sides with all the features of acute vestibular failure (Cases IV and V), Harrison (1962).




Case IV

*A. M. Male aet. 10 years. First seen 13.3.52*

Child is complaining of attacks of pain in the central occipital region for past three years. The attacks last some thirty minutes and are associated with clockwise rotational vertigo. No deafness and no tinnitus have been noticed. There is no vomiting and no visual disturbance.

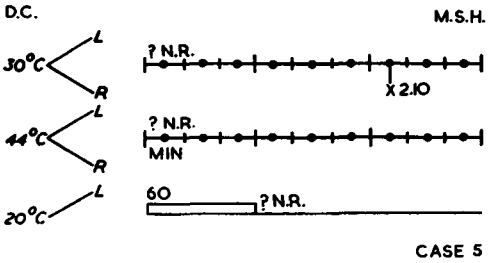
No abnormality found on examination of ears, nose and throat. No spontaneous nystagmus and no positional nystagmus. Corneals active. An X-ray of the skull and sinuses, showed no abnormality. No hearing loss. E.E.G. normal. W.B.C. normal.

3.5.53. Attacks lessening in frequency and severity.



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Positional vertigo may be benign paroxysmal which is the more common type of vertigo occurring in head injury cases (Harrison, 1956), (Case VI), or central and continuous, often the result of a lesion in the upper cerebellum (Case VII).




CASE V

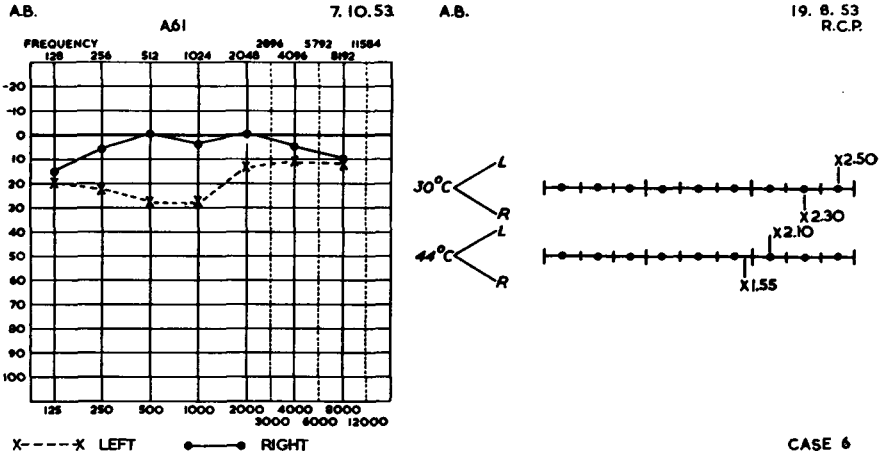
*D.C. Female aet. 3 years. First seen 29.11.51*

History during past year of nine or ten attacks of dizziness which appears to be rotational. No vomiting, no ear trouble, and no loss of consciousness. Nystagmus has not been noticed by mother who has no history of illness during pregnancy or in early life likely to account for the condition. The attacks last for a few minutes and since patient on phenobarb. have been less severe and less frequent.

Examination showed no notable abnormality in the ears, nose or throat and hearing normal. No spontaneous nystagmus. Corneal reflexes active and an X-ray of the skull and sinuses showed no abnormality. E.E.G. normal. W.B.C. normal.

Attacks became less frequent with treatment.

Followed up six years later. Since the age of five years she has had no further attacks.




CASE VI

*A.B. Male aet. 12 years. First seen 19.8.53*

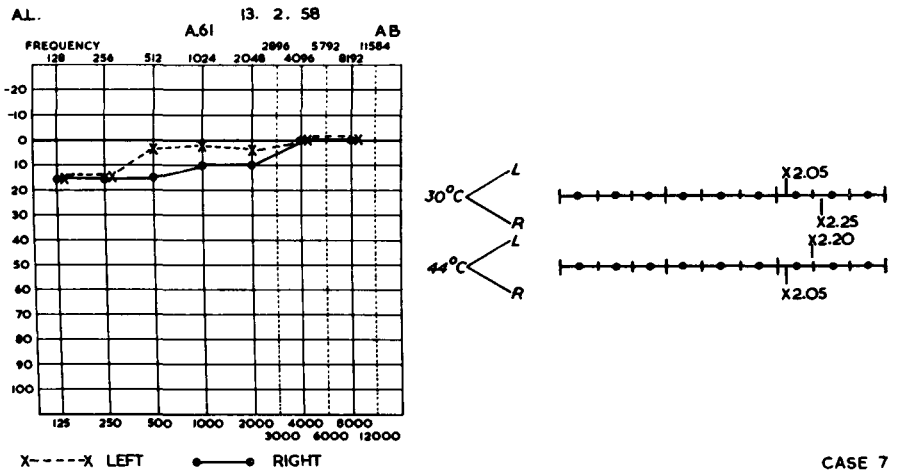
Admitted to the ward with concussion following an accident on 8.8.53. An X-ray of the skull showed a fracture of the right parietal bone. Complained of vertigo.

Examination showed the nose and throat to be normal. Postero-central perforation of the left tympanic membrane with a granular medial wall of the middle ear. Scarred right tympanic membrane. Marked positional nystagmus rotational in type with the head downwards and to the left. Latent interval. Passes off fairly quickly. Not so marked with the head downwards to the right.

7.10.53. Final review. No further vertigo. No positional nystagmus.



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CASE VII

*A.L. Female aet. 11 years. First seen 13.2.58*

Since the age of two and a half years attacks of staring into space and looking vacant. X-ray of skull and C.N.S. examination negative. E.E.G. 25.3.56 said to favour diagnosis of petit mal. There is nausea, but no vomiting and no loss of consciousness. Feels she will fall with the attacks and appears to have rotational vertigo. No deafness and no history of ear trouble. No tinnitus. Avoids games at school for fear of falling. Cerebrospinal fluid normal. Birth normal and no history of head injury.
Examination: No abnormality in ears, nose or throat. Oblique positional nystagmus continuous with little vertigo with the head downwards and to the right. Hearing normal. Skull X-rays, including petrous bones normal.
No abnormality discovered in central nervous system.
Examined by Mr. Hallpike in November, 1958. He considers the child has some fairly long standing organic brain stem disorder, probably of vascular origin.

*Ménière's disease*

For many years it has been accepted that Ménière's disease affects chiefly those of middle life. Brain (1938) stated that the average age in his series was forty-nine years, a fact that suggested a degenerative factor, or some process requiring years to cause symptoms (Tables I and II).

TABLE I

AGE OF INCIDENCE OF MÉNIÈRE'S DISEASE

| Age | Age at first visit 429 cases | Dandy's (Green & Douglas 1951) 587 cases | R. Brain's (1938) 41 cases | Cawthorne's (1954) 424 cases |
|---|---|---|---|---|
| | % | % | % | % |
| 0–9 | 1·2 | 0 | 0 | 0 |
| 10–19 | 1·4 | 3·4 | 2·4 | 1·4 |
| 20–29 | 6·2 | 13·8 | 4·8 | 6·4 |
| 30–39 | 16·3 | 28·6 | 14·6 | 23·3 |
| 40–49 | 23·9 | 25·9 | 22·0 | 31·8 |
| 50–59 | 28·6 | 19·9 | 19·5 | 21·7 |
| 60–69 | 19·0 | 8·2 | 31·7 | 12·3 |
| 70 | 3·9 | 0·2 | 5·0 | 3·1 |



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TABLE II

| | 0–20 | 21–30 | 31–40 | 41–50 | 51–60 | 61–70 | +70 | Total | Cawthorne's (1954) Series |
|---|---|---|---|---|---|---|---|---|---|
| Males | 5 | 16 | 36 | 55 | 70 | 30 | 7 | 219 | 489 (54%) |
| Females | 10 | 13 | 35 | 59 | 52 | 34 | 7 | 210 | 411 (46%) |
| Total | 15 | 29 | 71 | 114 | 122 | 64 | 14 | 429 | 900 |

It has been suggested by several authors, Escat (Portmann, 1929), Fowler (1952), Passe (1953), Lewis and Harrison (1956) and Wilmot (1957), that together with other closely related conditions such as migraine, Ménière's disease is associated with a defect in a portion of the carotid area of blood supply. As to the actual cause of the change no explanation has as yet been universally accepted. Arteriosclerotic changes affecting the vessel walls would be unlikely to produce the picture of a disease characterized by spontaneous remissions particularly in younger people. It is not anticipated that one specific cause will be found and it is possible that there are several factors responsible for the endolymphatic dilatation Hallpike and Cairns (1938), Naftalin and Harrison (1958), which is found in all cases of true Ménière's disease. The etiology in cases occurring in the lower age groups is likely to be quite different from that in the middle aged and elderly groups and nervous tension in certain persons with a naturally unstable autonomic nervous mechanism is likely to have a considerable bearing on the etiology, partly explaining the beneficial effect of sedation in many cases of this disorder. Allergy has frequently been blamed for the attacks, Seymour (1960), and may be of greatest importance in younger patients. If vascular spasm is a significant causal factor it is more likely to be so in the earlier and more active years of life.

TABLE III

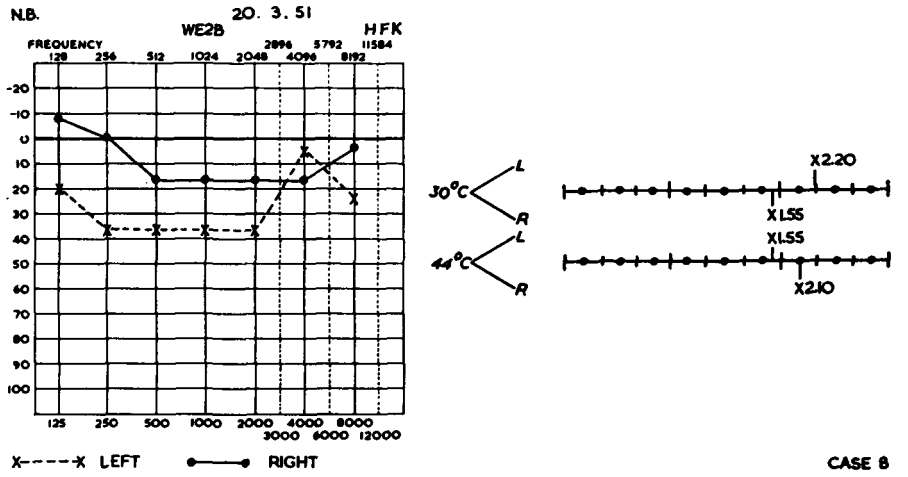
GREEN-DOUGLAS'S TABLE OF DANDY'S CASES OF MÉNIÈRE'S DISEASE

| Age at Onset of Symptoms (after careful questioning) | Number of Patients | |
|---|---|---|
| 0–9 | 0 | |
| 10–19 | 20 | 3·4% |
| 20–29 | 81 | 13·8% |
| 30–39 | 168 | 28·6% |
| 40–49 | 152 | 25·9% |
| 50–59 | 117 | 19·9% |
| 60–69 | 48 | 8·2% |
| 70–79 | 1 | 0·2% |



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Frequently the patient gives a history of vertiginous attacks less severe than would bring him to the doctor for some years before he is first seen, or he has had premonitory aural symptoms of deafness or tinnitus only. At other times he has had several series of attacks which on careful analysis are likely to have been labyrinthine in origin. Thus the average age of onset may be much lower than is suggested by the average age at which the patients first appear in the clinics. Again migraine and Bell's palsy are known to occur at times early in life (Vahlquist and Hackzell, 1949) so it is not inconceivable that this may be the case in Ménière's disease also (Table III). Vahlquist states that the incidence of migraine in children is much higher than is generally supposed. Young patients suffering from this condition are rarely seen in hospital and thus the nature of the disease as it occurs in children often remains obscure for a long time, especially if the attacks are atypical or occur at a very early age. Investigations showed that large numbers of children in Sweden were subject to attacks of migraine before the beginning of their schooldays, though the average severity of the illness is less in children than adults. The youngest patients described in the literature as




CASE VIII

*N.B. Male aet. 3 years. First seen 20.3.51*

Four months' history of attacks of rotational vertigo for a few minutes any part of day. No loss of consciousness and no vomiting. Buzzing tinnitus afterwards, though child could not locate ear. Increasing frequency, at first once in three weeks. No deafness and no tinnitus between the attacks which are unrelated to posture. Attacks never considered epileptiform. Paediatric examination normal.

Examination: Ears, nose and throat healthy. Normal C.N.S. No spontaneous or positional nystagmus. Corneals active. Rinne positive—left. E.E.G. normal.

18.5.53. Since original examination child has continued on treatment with sedation, restriction of salt in his diet, and nicotinic acid tablets sufficient to produce a good flushing of the face. The attacks have ceased and general condition continues to be satisfactory almost two years after commencement of treatment.

13.1.60. Condition good—no further attacks. Hearing tests and caloric tests within normal limits.

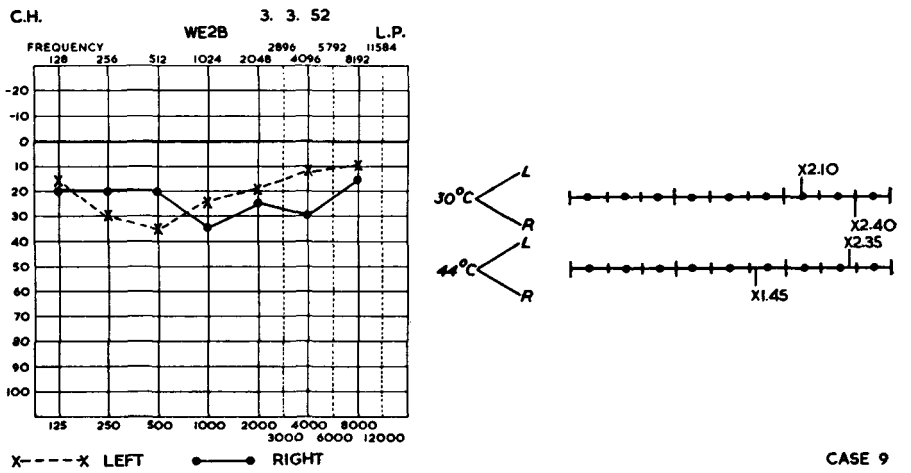


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suffering from Ménière's disease are a patient of Crowe's (1938) aged six years, another of Ford's (1944) aged four years and recently Sørensen (1959) has described Ménière's disease in a girl of seven years. E. P. Fowler, jr., has described to me three cases of Ménière's disease in children in his personal experience.

On careful investigation of the history of a number of cases of Ménière's disease evidence has frequently been obtained of some auditory disturbance dating back at least to early adult life. Also over the years several young children have been examined for a complaint of falling attacks, five of whom have been proved on careful clinical examination to have symptoms which in each case have suggested the diagnosis of Ménière's disease.

It will be seen from these cases that the significant difference between true Ménière's disease in the adult and what may be termed pseudo-Ménière's disease of childhood is the tendency for complete recovery to occur in the child with no residual loss of either hearing or vestibular response. It may well be that some of these children will eventually return in adult life with further attacks of vertigo and that the final picture may be that of the true adult type of Ménière's disease, but the younger cases described have been kept under observation for up to thirteen




CASE IX

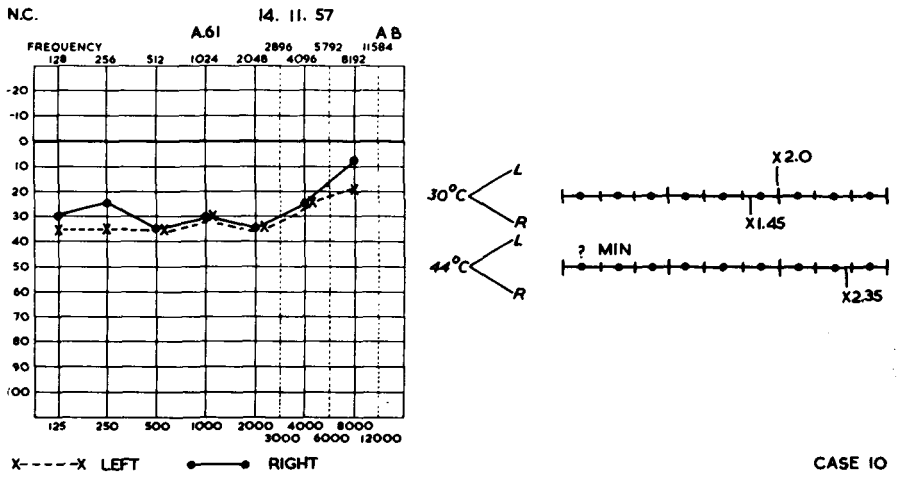
*C.H. Female aet. 9 years. First seen 3.3.52*

History of sudden attacks of rotational vertigo of four months' duration. Vertigo lasted only a few minutes and occurred in the morning. Not associated with tinnitus, vomiting or loss of consciousness, but some deafness had been noted. Very well otherwise.
Ears, nose and throat fairly healthy on examination, apart from crusting in left nostril and congested nasal mucosa. Sinuses clear on X-ray and no abnormality on skull X-ray. No spontaneous or positional nystagmus and steady on Romberg's test. Active corneal reflexes. No abnormality in central nervous system. Rinne positive on both sides and A.B.C. down six to eight seconds. E.E.G. normal.3.8.60. No further trouble for several years. Hearing tests and calorics within normal limits.



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years and no further vestibular symptoms have been noted (Cases VII, VIII and IX). Cases X and XI are children of an older age group who have symptoms and signs of true Ménière's disease and who have not shown the same tendency to improvement as demonstrated in the very young children.




CASE X

*N.J.C. Male aet. 3 years. First seen 4.11.57*

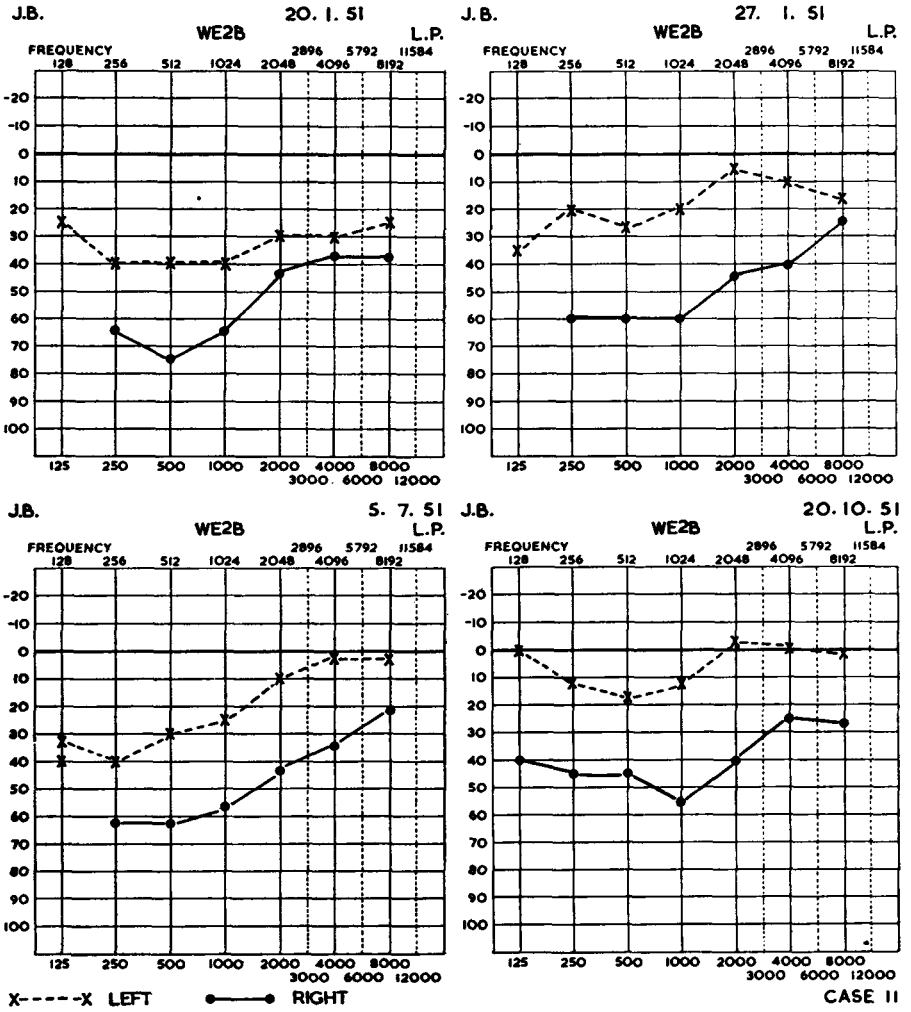
For one year patient has been complaining of attacks of vertigo of few minutes duration with nystagmus and vomiting varying in number up to three attacks in ten days. No vertigo in bed or with changes of position. No loss of consciousness. No tinnitus. No additional symptoms to suggest epileptic variant.
No abnormality in ears, nose or throat on examination. No spontaneous nystagmus. Hearing tests difficult, but hearing seemed reasonably good. Active corneal reflexes. E.E.G. normal.
20.1.58. One attack in six weeks.
3.8.60. No further vertigo. Hearing tests and calorics within normal limits.

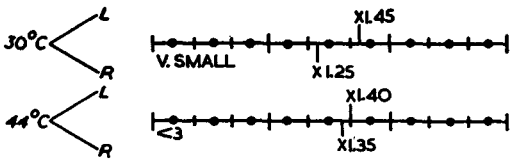
The differential diagnosis of aural vertigo in children is more difficult than of that in the adult as it is not easy to know how much weight to give to such findings as have been elicited in the young patient. Hence great care must be given to the consideration of other possible causes of the symptoms.

It seems possible that a number of cases recently described as Ménière's disease in children may be undiagnosed vestibular epilepsy a condition perhaps more common than at present recognized (Cases XII, XIII, XIV and XV). It has long been known that vertigo may be an aura of one of a variety of seizures, less frequently it may occur in pure or relatively pure form, the only symptom of an attack, and it is thus important to recognize its clinical characteristics. The aura of motor cortical epilepsy or of that affecting the basal ganglia or the red nucleus may be purely vestibular. This form of epilepsy is rarer than most of the many other forms, idiopathic



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CASE XI

*J.B. Male aet. 14 years. First seen 20.1.51*

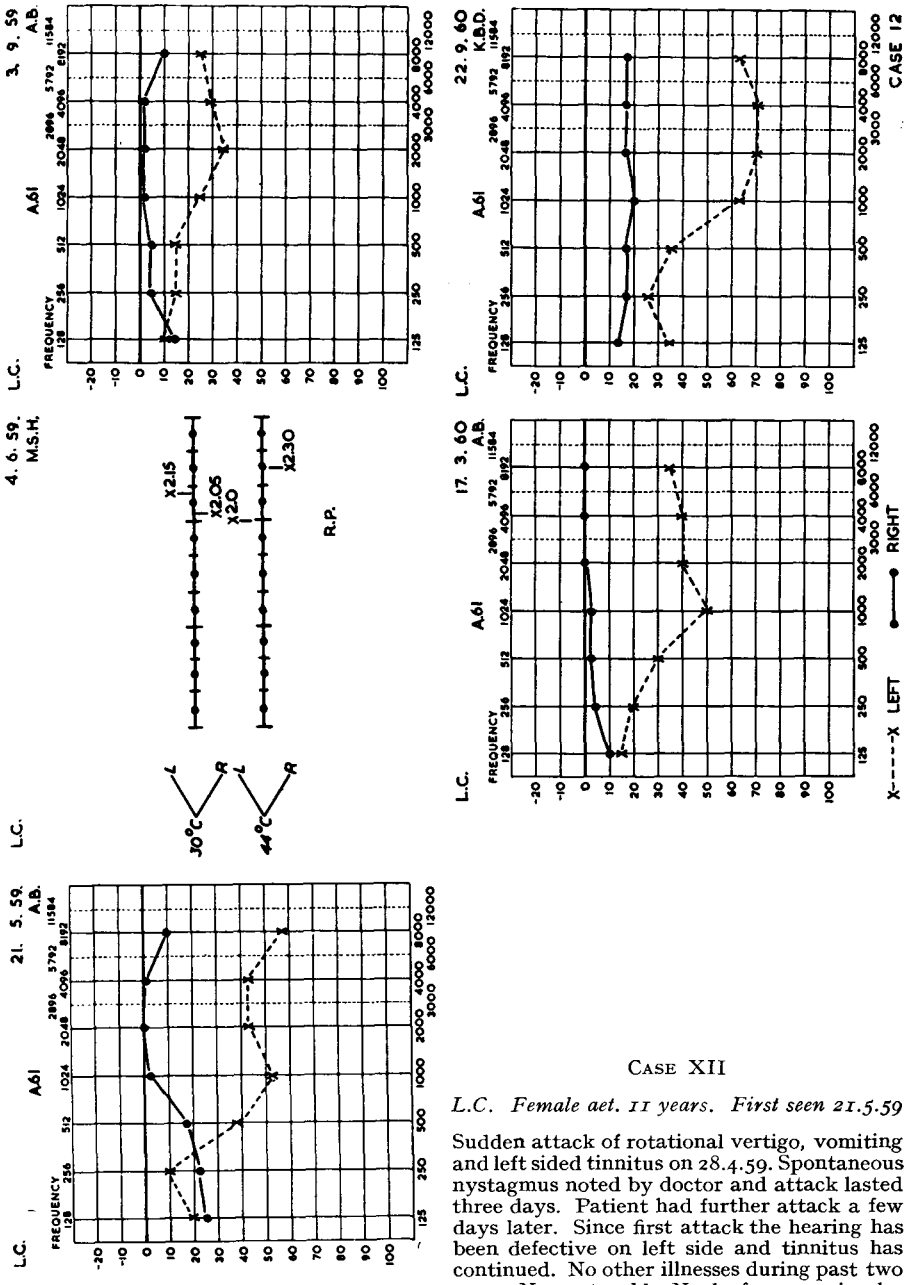
1943-48 attacks of rotational vertigo with nausea. Two years respite, then attacks returned. Helped by phenobarbitone (ergotamine no effect). Attacks came on suddenly, as often as twice a day, lasting ten minutes to eight hours. Tinnitus of buzzing type in right ear, which had been deaf for three years. Attacks unrelated to posture or any illness.

Examination: Ears, nose and throat healthy. C.N.S. normal. No spontaneous or positional nystagmus. Active corneals. Rinne positive on both sides. Weber referred to the left. A.B.C. eight seconds down on right side and three seconds on left. Hearing present in right ear with left ear masked. E.E.G. normal.

Last seen 1958. Condition satisfactory with treatment. Tests show little change in hearing and vestibular responses.



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## Case XII

*L.C. Female aet. 11 years. First seen 21.5.59*

Sudden attack of rotational vertigo, vomiting and left sided tinnitus on 28.4.59. Spontaneous nystagmus noted by doctor and attack lasted three days. Patient had further attack a few days later. Since first attack the hearing has been defective on left side and tinnitus has continued. No other illnesses during past two years. No ear trouble. No deafness previously. No head injury.

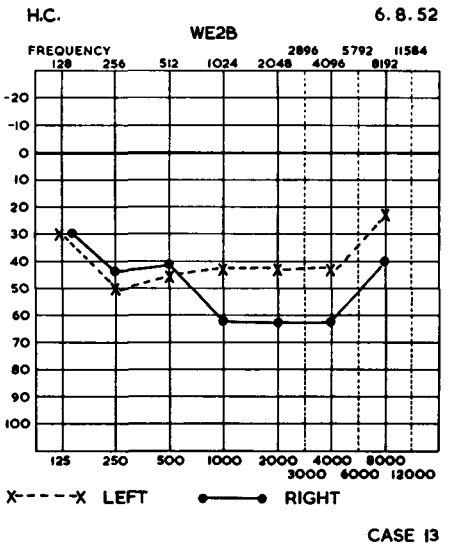
Nose and throat healthy on examination. Normal tympanic membranes. Rinne positive on left side and A.B.C. down six to seven seconds. X-ray of sinuses showed no abnormality. Blood Hb. 100% (14·6 g%). No positional nystagmus and corneal reflexes normal. E.E.G. normal.

27.9.59. Patient continued to have occasional attacks of vertigo which have improved considerably on nicotinic acid therapy.



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and symptomatic. Pedersen and Jepsen (1956) have described fourteen cases of epileptic vertigo, only six with impairment of consciousness and eight with E.E.G. abnormalities. Two had hearing impairment. Behrman (1955) recorded a case of vestibular epilepsy with unilateral hearing loss in which destruction of the labyrinth cured the attacks, but in such a case the diagnosis is more likely to have been Ménière's disease. A child may have a series of dizzy attacks over a long period of time, but later develop a major epileptic attack and if an anti-convulsant is given the child may go back to dizzy spells only.




CASE XIII

*H.C. Female aet. 2½ years. First seen 5.7.51*

No central nervous system or other abnormality discovered clinically or biochemically by Dr. Trevor Wright. Bouts of sickness since early infancy, associated with staggering and vertigo, at ten days' intervals and becoming more frequent though less severe. Learning to recognize the onset of the attacks. Never free of attacks for more than fourteen days during eighteen months. No deafness, no tinnitus, headache or earache, but nystagmus noted by father, a medical man, during an attack. Many forms of treatment tried with no effect. E.E.G. normal probably.

Ears, nose and throat healthy on examination. No spontaneous or positional nystagmus and no Rombergism. Hearing appeared good, but difficult to test ears separately. X-ray of skull no abnormality. Caloric test for 40 secs. at 30°C only as child would not tolerate water at 44°C. Responses on left side lasted 1 min. 50 secs. and on the right side 2 min. 30 secs.

6.8.52. Seen during an attack and spontaneous nystagmus to right noted. Audiogram showed marked hearing loss on both sides, probably exaggerated.

Nicotinic acid prescribed before meals and cyclobarbital. Few if any attacks occurred after treatment commenced.

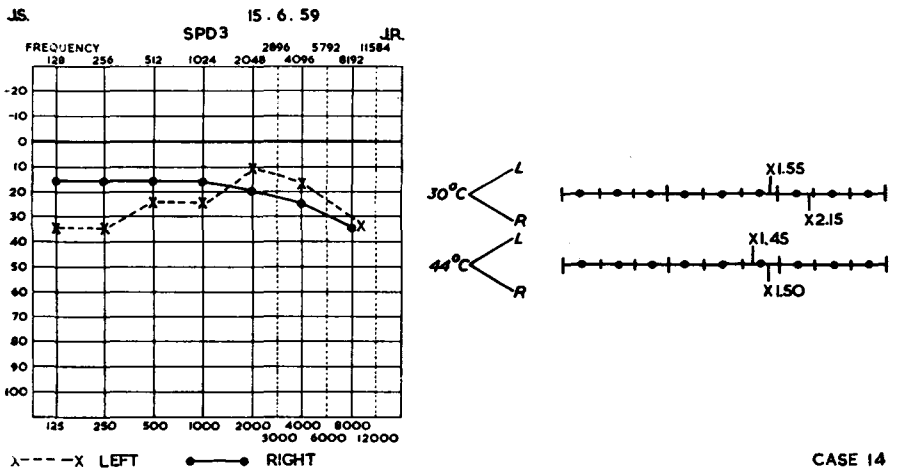
May, 1960. Child's condition quite satisfactory and has had no further attacks since treatment commenced. Hearing is now normal.

It is considered that in spite of the above findings that symptoms in this case are probably of epileptic type.



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The clinical features of this vestibular type of epilepsy are characteristically recurrent attacks of dizziness with at times, though not always, lapses of consciousness. Failing unconsciousness, complete amnesia may be noted or the patient may not know of any impairment of consciousness especially if it is of only a few seconds duration. Falling is absent and it is unusual for objects to be dropped, but the onset is sudden and without warning. The degree is variable and is rarely followed by nausea. One of the most important and unique findings is the absence of post-ictal unsteadiness. The patient recovers at once except for a short period of mental dullness, Alpers (1960). This should point to the diagnosis which is confirmed by a history of impairment or loss of consciousness or amnesia during the attack similar to the momentary lapse of consciousness in petit mal; the patient is not aware that he looks blank or pale for the short period of the attack, and questioning of close contacts of the patient may be necessary to elicit this history.




CASE XIV

*J.E.S. Female aet. 5 years. First seen 15.6.59*

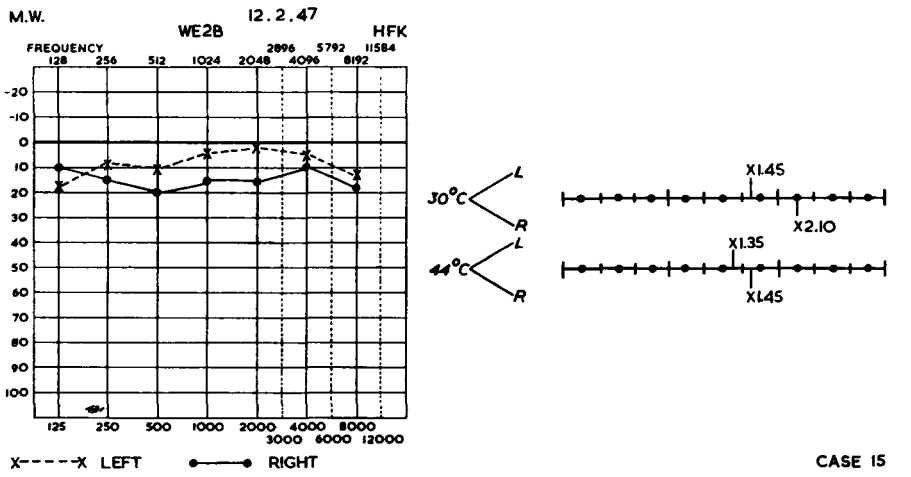
Referred by Dr. Stone from Scunthorpe Hospital. Began to have attacks of dizziness in October, 1958 with deviation of head to left and what family described as jerking movements of the eyes. There has been transient loss of consciousness with attacks and focal movements of left hand. She has had eight or nine attacks during past seven months and has been unconscious for up to one hour with these. No complaint of tinnitus and is quite fit between attacks. During past three years has complained of earache with bleeding from ear, but no otorrhœa and hearing been down on occasions during past three years. Has throat trouble with colds, but no nasal trouble apart from the colds. E.E.G. reported grand mal epilepsy and since being on an anti-convulsant there has been some improvement.

Little of note in ears, nose or throat on examination. No corneal abnormality. No positional or spontaneous nystagmus. Sinuses clear on X-ray. Some irregularity of the light reflex in the left ear with crusting on the drum inferiorly and the right drum was congested. The attacks in this case appear to be epileptic in type and the hearing loss is probably the result of a low-grade infection in the middle ear on the left side. Electro-encephalogram appears to confirm the diagnosis. The defect has been better on treatment for epilepsy.



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Physical and neurological investigations usually show no abnormality in vestibular epilepsy and the E.E.G. may also be within normal limits though some cases show generalized cerebral dysrhythmia or discharge during sleep. The E.E.G. and other evidence suggests that the lesion is in



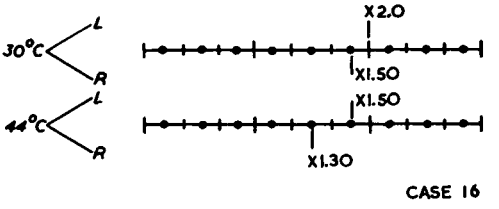

Case XV

*M.W. Female aet. 7 years. First seen 12.2.47*

Child complained of attacks of rotational vertigo and buzzing tinnitus commencing seven months previously, unrelated to illness. The attacks came on suddenly, at rest or after exertion, and the child had to grasp a nearby object to avoid falling. They passed off in five minutes. There was nausea before the attacks, buzzing in the ears followed and then the dizziness. The child was quite fit after attacks.

Examination: Ears, nose and throat healthy. No spontaneous or positional nystagmus and no Rombergism. Rinne positive. C.N.S. otherwise normal. X-ray sinuses clear.

Salt and fluid restriction and sedation advised. Condition improved with treatment and when child was seen finally fourteen months later condition was considered satisfactory. Attacks in this case may well be epileptic.




Case XVI

*S.A. Female aet. 2½ years. First seen 15.10.49*

Child had had several attacks of rotational vertigo during the past months and complained of the room spinning around her and fell down. At times appeared to shout loudly and was thought to be deaf. She was bad tempered, tolerated noise poorly and complained of noises in her head.

Examination showed ears, nose and throat to be healthy. There was no positional nystagmus and no Rombergism. A "peep show" audiogram was attempted but was not successful. General examination including central nervous system showed no abnormality.

18.11.50. Condition continues to be satisfactory on sedation. No further attacks when last heard of on 10.4.59. Attacks in this case may well be epileptic.



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the temporal or temporo-parietal area, and Penfield (1957) has found that stimulation of these areas produces vertigo of similar type.

It is very difficult to establish the diagnosis if the vertiginous seizures occur without other manifestations of epilepsy, the problem is simple if the vertigo occurs in conjunction with other types of seizures such as petit mal, grand mal or an attack of psychomotor epilepsy. The absence of after-discharge has been mentioned, also the momentary amnesia or impairment of consciousness. A past history of head injury or other cause of a small focal lesion is significant and the diagnosis may be heavily supported by the E.E.G. findings. E.N.T. history and examination may establish a hearing loss and tinnitus or a caloric abnormality in cases with peripheral types of vertigo. Cerebellar epilepsy (Syndrome of the Vermis) shows typically truncal ataxia with an unsteady gait but no unconsciousness and at times spontaneous nystagmus, the electroencephalogram is not affected and hearing loss is unlikely, but treatment with a sedative or nicotinic acid is very effective. (See Case VI.)

Also it is well recognized that other central conditions may be associated with vertigo in childhood, such as meningo-encephalitis, cerebellar tumour, a rapidly growing pontine tumour or a sarcoma of the base of the skull.

Meningo-encephalitis occurs in children one to three years old, commencing with unsteadiness fairly sudden in onset and nystagmus of dancing irregular asynchronous type may develop after a week.

Cerebellar tumours. Over three quarters of the cases of medulloblastoma or astocytoma of the cerebellum in childhood present vestibular disturbances without spontaneous nystagmus. In some cases the tumour may penetrate into the region of the lateral lemniscus and produce a central deafness affecting the low frequencies.

A rapidly growing pontine tumour in a child produces ataxia of periodic type, the child walks ataxically a few paces, then normally a few more and again becomes ataxic. No other signs may be evident in the early stages.

A sarcoma of the base of the skull which originates centrally may work its way laterally along the temporal bone with no signs and few symptoms until it reaches the ear and the first evidence of the lesion may be an episode of vertigo.

## Summary

A review of the causes of vertigo in children has been undertaken with particular emphasis on the vestibular causes. Illustrative case histories are included.

An atypical form of Ménière's disease appears to occur in childhood and is better called pseudo-Ménière's disease of childhood. It is self-limiting or responds easily to treatment in almost all patients.



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A number of children reported as cases of peripheral vertigo may well be suffering from a form of vestibular epilepsy, difficulties in the diagnosis of which may be considerable.

The author would like to record his appreciation of the help and encouragement he received from his paediatric colleagues, C. C. Harvey, D. Stone and T. Wright. The case notes in all the illustrative cases have been made very brief, but it is hoped that the required points have been illustrated.

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