known that the effect of heat cannot be confined to the part where it is applied. It has been many times demonstrated by the plethysmograph that if one limb, an arm or leg, be heated in a bath the other members and the entire surface of the body are affected in the same manner. The old maxim that if one member suffers all the others suffer with it has found a new expression in what is known as the "consensual reaction" to heat. Local heat may unpleasantly excite the heart and circulation. Very hot packs of fango, peat, or estuary muds are commonly used in chronic arthritis to improve the local circulation and assist in the resolution of deposits. But these applications frequently disturb the heart, and, to avoid circulatory excitement and subsequent fatigue, it is necessary during the pack to allow iced water to flow through a Leiter's coil over the heart region.

The most characteristic and desirable effect of local heat on the general circulation is the relief of vascular and nervous tension. Consequently at many of the spas partial baths have for many years formed an important part of the cure. The most interesting baths of this kind are foot and arm baths at rising temperatures. These have been employed in conjunction with other physical methods in many spastic troubles, such as asthma, and in chronic respiratory disorders, angina pectoris, and arterial hypertension.

A CASE OF MEGALENCEPHALY SHOWING AN UNUSUAL TALENT FOR CALCULATING DATES

BY

W. M. McGRATH, M.B., B.Ch., D.P.M.
LEAVESDEN MENTAL HOSPITAL

From time to time there appear in the literature reports of mentally defective children or adults who, against a general background of amentia, are yet able to display special talents in one or more directions.

In the case to be recorded there is an astonishing aptitude for dates. The patient remembers the date of death of various occupants of his ward, the arrival or transfer of doctors and nurses, and the dates of the examinations of his blood and cerebro-spinal fluid. He knows all the patients in his ward by their correct names and can tell the number of patients from day to day. The daily happenings are remembered in detail, also the names, date of entry, and promotions of the nursing staff. He readily recalls the dates of visits of different members of the medical staff. His chief ability, however, lies in the correct naming of the day of the week on which any given date falls.

Various degrees of hypermnesia are not particularly rare among the feeble-minded. Memory in this patient plays a more important part than appears at first sight, for there are grounds for believing that he has committed to memory the day of the week corresponding with some key-date. When given a date at random, he counts backwards and forwards to the nearest one corresponding with his initial key-date, making allowances for a leap-year. It has been observed that he is quicker at calculating future than past dates. Examples of his faculty in this matter can be seen from the appended table of questions which were put to him.

The mental imagery employed by this patient is thought to be of the auditive type. While making a calculation he displays constant rhythmical hyperkinetic movements, at the same time repeating the question aloud. But if the trunk is fixed and he is not allowed to repeat ques-

tions, he reckons less quickly and makes errors. There is marked poverty of ideation, which, in the mental defective's mind, tends towards an astonishing concentration of effort of his memory processes.

Family and Previous History

The patient was certified under Section 24 of the Lunacy Act on May 24th, 1915, and admitted to Leavesden Mental Hospital on January 17th, 1919. He was the fourth child in a family of six, and at the time of his birth his mother was 34 and his father 32. The unusual size of the child's head was first noted by his mother when he was 5 weeks old. The patient remembers, however, that his head was still increasing in size at the age of 6 years, and other children used to call him "big-head."

Since July 18th, 1933, the exhibition of luminal therapy has had a marked effect on the reduction of epileptic fits, and he now averages only three or four fits each month. Before epileptic fits he becomes abusive, obscene, and excitable; often refuses food, and is destructive and impulsive.

Present Condition

The patient is an extremely obese adult male, aged 32, whose height is 5 ft. 4 in., and weight 15 st. 2 lb. His head is enlarged in all diameters, ovoid in shape, and brachycephalic with an increase in the transverse diameter. The height of the forehead is exaggerated, but it does not bulge in the way that is ordinarily seen in the hydrocephalic. The maximum circumference of the head, 27½ inches, is obtained at the superciliary margins; in this respect he differs from the ordinary hydrocephalic, whose maximum cranial circumference occurs in the temporal region. The patient's measurements are: length, 20.5 cm.; breadth, 19.7 cm.; circumference, 70.6 cm.; height, 190 mm.; cephalic index, 81; cubic content, 2,583 c.cm. by Lee's formula. X-ray examination of the cranium revealed nothing abnormal.

The patient is remarkable in that not only is the cranium enlarged, but the face also. The condition is therefore suggestive of a true megalencephaly rather than a hydrocephaly. There is marked growth of fine hair on the skull, which is tightly stretched, and the skin covering the face is coarse and pitted. In the neighbourhood of the nose are several small adenomatous masses. Percussion of the cranium yields a box-note, not quite the stony hardness associated with hydrocephaly. The palate is high, with a maxillary prognathism and marked spacing of the upper incisors. The face is symmetrical, and almost as broad as it is long; the nasolabial folds are poorly defined, and the expression is one of facile content. The hands are fat and dimpled, with slight saddling of the digits, the nails unduly curved from side to side, and slightly ribbed, and the fingers tapered. When the patient is stripped it is seen that he is enormously obese, the fat being evenly distributed over the trunk and limbs; there is marked generalized seborrhoea. The lower limbs are hairy, thickened, and indurated. The patient remains all day in a wheeled chair, and although he is unable to walk he can move himself from one chair to another.

Central Nervous System

The eyes show alternating strabismus and nystagmoid jerkings on looking to the right. The pupils are eccentric, equal, and irregular in outline; the fundi are normal. The right pupil is 3.5 mm. in diameter, and the left is 3.5 mm. Both pupils react sluggishly to light and convergence. The cranial nerves and articulation are normal. Dynamometer reading in right hand is 70; left hand 25.

There is a coarse tremor limited to the right upper limb, and the left foot is in a position of talipes varus. All tendon reflexes are exaggerated, more so on the left side; bilateral ankle-clonus; left plantar, extensor; right plantar, flexor. There is no loss of sphincter control. He has hemiplegia affecting the left upper and lower limbs. The left upper limb, which is the same size as its fellow, is adducted, semi-flexed at the elbow. The thumb is adducted and markedly flexed, and the fingers held in a position of hyperextension at the metacarpo-phalangeal joints and semi-flexion at the interphalangeal joints. The muscles of the left forearm and left calf are somewhat smaller than on the right side. Associated movements are present. Spinal curvature exists, with convexity to the right. The circumference of the neck is $18\frac{1}{2}$ inches. There is no loss of kinaesthetic sensibility. Cerebro-spinal fluid pressure: head flexed, 21.5 cm.; 22 cm.; extended, 16 cm., 17 cm. Blood pressure is 170/80. Urinary excretion 50 oz.; examination of the urine shows slight reduction of Benedict's solution.

Sugar Tolerance and Blood Count

There is marked decrease in sugar tolerance; the blood sugar increases up to 221, and at the end of two hours has not returned to the resting figure: 0 hours, 105 mg. per 100 c.cm.; $1\frac{1}{2}$ hour, 221 mg.; 1 hour, 201 mg.; $1\frac{1}{2}$ hours, 161 mg.; 2 hours, 146 mg. With the obesity, these findings strongly suggest some pituitary disorder. The patient's weight has increased from 8 st. in 1925 to 15 st. 2 lb. in 1934.

Total differential blood count: red blood cells, 5,185,000 per c.mm.; haemoglobin, 113 per cent.; colour index, 1.1; white blood cells, 9,450 per c.mm.; polymorphs 5,220 (55 per cent.), lymphocytes 3,680 (39 per cent.), eosinophils 281 (3 per cent.), monocytes 281 (3 per cent.).

Mental Tests and Mental Characteristics

Burt's revision of Binet-Simon scale: mental age of 5 years 11 months. Burt's test of arithmetic, graded oral test, mental test: mental age of 5.6 years.

Performance Tests of Intelligence

	Score	Mental age.		Score	Mental age
Porteus maze	5 and 4	4 yrs.	Healy picture completion test ...	0	0
Goodenough's drawing test ...	6	4 ..	Cube construction test	0	0
Cube imitation test	0	0 ..	Dearborn form-board	0	0
Manikin test	0	0 ..	Healy construction test "A" ...	0	0
Goddard formboard	0	0 ..			
Woodworth and Wells substitution test ...	0	0 ..			
Triangle test	0	0 ..			

The patient can neither read nor write, but readily repeats the alphabet forwards and backwards; he is also unable to tell the time by the clock. He never initiates a conversation, and has no friends among the other patients. He displays a keen sense of humour and appreciates music, but expresses no desires or ambitions, and makes no plans for the future. Moreover, he makes no attempt to occupy himself, having no desire or aptitude for handicrafts. He can always tell when he is going to have a fit, as he has a nasty feeling in the throat and then he begins to shake all over. Before the fit he becomes very abusive and obscene to the nursing staff.

Special Arithmetical and Date Tests

Question	Patient's Reply	Correct Answer
What day is:		
Christmas Day in 1940?	Wednesday	Wednesday
March 3rd in 1940?	Sunday	Sunday
Christmas Day in 1950?	Monday	Monday
May 16th in 1950?	Tuesday	Tuesday
Christmas Day in 1955?	Sunday	Sunday
August 15th in 1955?	Monday	Monday
Christmas Day in 1938?	Sunday	Sunday
Christmas Day in 1963?	Sunday	Sunday
What day was:		
Christmas Day in 1930?	Tuesday	Tuesday
July 3rd in 1905?	Monday	Monday
August 4th in 1914?	Tuesday	Tuesday
What day will Christmas Day be in 1930?	Tuesday	Tuesday
What date will:		
Good Friday be in 1936?	April 17th	April 10th
August Monday be in 1935?	August 3rd	August 3rd
Whit Monday be in 1936?	June 1st	June 1st
The first Monday in August, 1936, is the 3rd; what are the dates of the following Mondays in the month?	10th 17th 24th 31st	10th 17th 24th 31st
What are 9 times 5?	31	45
What are 5 times 9?	52	45
How many 6's in 12?	3	2
How many do:		
9 and 7 make?	16	16
10 and 8 ..	18	18
6 and 4 ..	10	10
12 and 11 ..	23	23
15 and 16 ..	30	31
13 and 14 ..	29	27

Questions and Patient's Reaction Time

Question	Patient's Reply	Reaction Time
What day was:		
April 1st, 1893?	Thursday	7 seconds
June 21st, 1852?	Sunday	25 ..
September 10th, 1804	Friday	15 ..
June 1st, 1793?	Wednesday	20 ..
October 27th, 1754?	Monday	35 ..
December 11th, 1702?	Sunday	40 ..
December 12th, 1900?	Wednesday	35 ..
June 7th, 1900?	Thursday	10 ..
January 1st, 1825?	Saturday	8 ..
What day is:		
August 21st, 1966?	Sunday	25 ..
May 10th, 2024?	Sunday	20 ..
June 10th, 2050?	Tuesday	15 ..
September 16th, 1999?	Thursday	7 ..
March 4th, 1950?	Saturday	13 ..
May 6th, 1971?	Thursday	21 ..
The day of week for:		
January 1st, 1920?	Thursday	3 ..
" 1st, 1917?	Monday	4 ..
" 1st, 1923?	Monday	2 ..
" 1st, 1914?	Thursday	2 ..
" 1st, 1926?	Friday	2 ..
" 1st, 1911?	Sunday	6 ..
" 1st, 1929?	Tuesday	2 ..
" 1st, 1908?	Wednesday	2½ ..
" 1st, 1932?	Friday	1 second
" 1st, 1927?	Saturday	1 ..
" 23rd, 1911?	Monday	11 seconds

Questioned as to leap-year day in certain years the patient replied as shown in the following table.

Year	Patient's Reply	Correct Answer	Reaction Time	Year	Patient's Reply	Correct Answer	Reaction Time
1936	Saturday	Saturday	17 secs.	1824	Saturday	Sunday	16 secs.
1932	Monday	Monday	7 "	1828	Thursday	Friday	10 "
1928	Wednesday	Wednesday	9 "	1832	Tuesday	Wednesday	5 "
1924	Friday	Friday	7 "	1840	Thursday	Saturday	11 "
1920	Sunday	Sunday	10 "	1848	Monday	Tuesday	6 "
1916	Tuesday	Tuesday	4 "	1860	Tuesday	Wednesday	10 "
1912	Thursday	Thursday	3 "	1836	Sunday	Saturday	9 "

Remarks

This patient is extremely interested in and proud of his achievement. He displays a remarkable singleness of purpose, and while making a calculation appears to be entirely oblivious of environmental stimuli. Whatever may be the causes producing defective development of the nervous system, it would appear that their incidence on all parts of that system need not be the same. It is possible, consequently, to have one portion of the nervous system proceeding to attain maturity, while the other portions lag behind to a greater or lesser extent. When this happens we get ability in some particular field standing out conspicuously against a background of amentia. The contrast is sometimes so striking as to give the impression of phenomenal capacity as regards the department of knowledge concerned, but this appearance is probably misleading. In their own special way the "idiots savants," as persons exhibiting the features under consideration, are not superior to persons whose general mental level is normal.

I wish to thank the medical superintendent, Dr. R. M. Stewart, for permission to publish this case.

Clinical Memoranda

Epidemic Catarrhal Jaundice amongst Children

In October, 1934, I came across one or two cases of jaundice in very young school children which preceded a mild epidemic of similar cases amongst other children of the same school. All the patients had the same symptoms and the disease ran the same course. Lack of facilities prevented full investigation, but there was a similarity between the symptoms and course to that of a very mild type of Weil's disease (spirochaetosis ictero-haemorrhagica). Practically all the cases were in the same age group—5 to 7 years—and all attended the same school, although their homes were scattered about. Running concurrently with the "epidemic" was an epidemic of diphtheria.

SYMPTOMATOLOGY

There were four stages of the clinical symptoms.

1. The mother would notice that the child was listless and inclined to lie about the house. Appetite was poor, and occasionally headache was complained of. This stage lasted about four or five days.

2. At the end of this period the child would appear to be shivering, and the temperature at this stage varied from 99° to 104° F., while the pulse rose to 80 to 100. All the cases now showed one symptom in common—namely, sore throat—the tonsils being swollen, and in most of the cases there was a little "membrane," greyish-yellow in colour, as well as fetor. The concurrent diphtheria epidemic naturally led one to send swabs, which resulted in all cases being reported as "diphtheria-negative." Vomiting was present in most cases. At this stage appeared the first sign of incipient jaundice, a yellowish tinge being found in the conjunctivae. The

urine up to this time would not give a bile reaction to nitric acid on filter paper washed in it, but within forty-eight hours the greenish-brown tinge of bile was visible, and with its appearance the temperature would fall practically to normal. The urine was alkaline, and there was some albumin.

3. The second stage lasted about forty-eight hours, and the patient would both look and feel better, but the stools were now light in colour, and in about twenty-four hours were definitely clay-coloured. The skin of the entire body was lightly jaundiced, although itching was not found. The throat symptoms disappeared; only in one case was there a complaint of seeing yellow.

4. The stage of jaundice persisted for five to seven days, the urine first becoming normal in colour, followed by the stools, the latter becoming brown in from seven to ten days. Recovery was complete in another fortnight. As exceptions to the above sequence of events, the spleen was definitely tender in three cases, and in one case there was marked and offensive diarrhoea.

Treatment was on simple lines. Calomel 1/4 grain four-hourly until 1½ grains had been taken, was followed by a saline purge. In two cases where jaundice persisted for two weeks, hexamine, with acid potassium tartrate, was given. Diet was restricted to fluids.

SUMMARY

There were twenty-five cases in all, and each attended the same school; most of these were in the very youngest classes. All had one premonitory symptom in common—sore throat with fauces simulating diphtheria. In connexion with the latter there was a short respite from fresh cases during the Christmas holidays, and in this period I did not come across any fresh cases of jaundice. With the reopening of the school after the holiday the cases of jaundice reappeared with new cases of diphtheria. Another factor in common was that these children all received a daily ration of milk (at school), which they drank through a straw from a bottle, and that they were mostly the children of mine workers.

An account of an outbreak of a similar nature, which occurred in September, 1933, was reported in the *British Medical Journal* (1934, i, 330) by Dr. Montford of Castle Donington, a village about fifteen miles from this one. Since the end of January I have not met with any fresh cases.

Newhall, Burton-on-Trent.

E. M. R. FRAZER, M.D.

Subcutaneous Emphysema following Subcricoid Injection of Lipiodol

Subcutaneous emphysema is not a well-recognized complication of injection through the cricothyroid membrane or in the subcricoid region. Only a brief reference is made to the possibility of this accident by Siccard and Forestier in their book *The Use of Lipiodol in Diagnosis and Treatment*, and no indication is given of the frequency of its occurrence. The following case may thus be of interest.

A boy, aged 5, was given 20 c.cm. of lipiodol for suspected bronchiectasis following pertussis. The injection was made without difficulty in the subcricoid region by means of a 20 c.cm. syringe and an ordinary intravenous needle, under general anaesthesia. Within a few minutes of injection a swelling was noticed in the neck at the site of injection. The typical crepitus of surgical emphysema was felt in the swelling, which rapidly increased in all directions. Within about six hours it had reached its maximum, having spread over the thorax and abdomen, down both arms, and over the face (causing considerable distortion of the features) and scalp. No embarrassment was exhibited by the patient, other than that due to the anaesthetic, and after a week most of the air had been absorbed.

ALISTAIR ARGYLL ROBERTSON,

Children's Hospital, Sheffield.

M.B., Ch.B.