Table of Results Obtained from Healthy Children.

No.	Age.	Pulse-Rate.	Auditory Systolic.	Auditory Diastolic.	Pulse Pressure.	No.	Age.	Pulse-Rate.	Auditory Systolic.	Auditory Diastolic.	Pulse Pressure.
1	10	100	108	80	28	21	7	128	110	60	50
2	12	102	105	78	27	22	12	128	100	80	20
3	10	60	90	55	35	23	7	100	106	85	21
4	12½	50	108	65	43	24	5	95	114	90	24
5	14	84	108	78	30	25	4	90	102	58	44
6	12	84	115	80	35	26	10	80	106	55	51
7	12	84	113	77	36	27	5	70	95	55	40
8	10	92	110	86	24	28	10	90	110	78	32
9	12	100	110	70	40	29	6	120	120	80	40
10	13	106	100	70	30	30	11	106	108	62	46
11	8	104	112	75	37	31	13	60	90	70	20
12	14	88	106	68	38	32	11	90	120	90	30
13	9	80	108	75	33	33	4	80	90	60	30
14	8	90	120	70	50	34	9	93	120	80	40
15	11	100	120	90	30	35	8	104	115	75	40
16	7	120	110	60	50	36	6	92	106	78	28
17	11	65	120	65	55	37	8	96	100	70	30
18	9	96	90	62	28	38	11	82	120	85	35
19	12	96	120	80	40	39	11	126	130	80	50
20	5	132	90	50	40	40	4½	84	100	70	30

Averages: Age, 9.5; pulse-rate, 93.6; auditory systolic, 108.1; auditory diastolic, 72.4; pulse pressure, 35.7.

is only very slightly lower in children than in adults. Various observers, using the much less accurate tactile method, have estimated the average systolic pressure in children at decidedly lower values, for example, 90 mm. mercury. But the fallacies of the tactile index are much more serious in young children than in adults, and the results by the auditory method are so sharp and precise as to admit of no doubt.

The average diastolic level, on the other hand, is decidedly higher in children than in adults; this is the main cause of the considerably smaller pulse pressure in children—35.7 mm.—as compared with 46 mm. in adults.

Comparison of Children and Young Adults.

The relation between the values obtained in a series of fifty-nine healthy young adults and in the present series of children is as follows:

	Adults.	Children.
Systolic pressure ...	111.8	108.1
Diastolic pressure ...	65.7	72.4
Pulse pressure ...	46.0	35.7

The average pulse-rate in children was 93.6 (range 132-50), and it is noteworthy that, while a slow pulse naturally tends to give a lower diastolic pressure (by allowing longer time for the blood to escape from the arterial system into the capillaries between the beats), the adjustment of the vascular system may be such as to give a diastolic pressure quite up to the normal, in presence even of a markedly slow heart-rate—for example, Cases Nos. 4 and 31 in table.

Some other points of comparison between children and adults may be stated. By the tactile method the average systolic pressure was 105.7 in children as compared with 108.7 in adults, while the range was 125-84 in the former and 132-92 in the latter.

By the auditory method the range of systolic pressure was 130-90 in children and 135-92 in adults, while the range of diastolic pressure was 90-50 in the former as compared with 82-50 in the latter.

In children the relation of pulse pressure to systolic pressure was 1:3 and to diastolic pressure 1:2, while in adults this relation was 1:2.7 and 1:1.6 respectively.

The normal readings of systolic and diastolic pressures, and of pulse pressures in children, as described above, are

so definite and reliable as to constitute a sound basis for the study of pathological variations and their significance.

We have to record our thanks to Professor J. A. MacWilliam for much kind advice and assistance in this investigation.

ON IDIOGLOSSIA: WITH AN ACCOUNT OF A CASE.

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IDIOGLOSSIA is a defective condition of speech of such a nature that the affected person is unintelligible, except, perhaps, to his own relations; yet what he speaks is really English, very grossly mispronounced. In the following marked case rapid improvement took place under treatment.

A boy, 13 years and 9 months old, was brought to the Sick Children's Hospital, Edinburgh, on February 18th, 1914, on account of his defective speech. Dr. John Thomson reported that he was strong and healthy, though small for his age. His intelligence was quite up to the average. His birth was premature by two weeks, his mother having had a fright. There was no family history of any disability of speech. Though his teachers (in a country school) apparently left him much to himself, he was advanced in his classes along with his companions.

When he was first examined he mispronounced twelve letters in the alphabet. These were as follows: C—he, F—ech, H—aick, I—oi, L—ai, Q—kay, S—ech, V—oo, W—do'er, X—ech, Y—oi, Z—he'ed. Yet, as in other cases, many of these letters were pronounced quite differently when he spoke. Moreover, consonantal sounds were often slurred over, or missed out altogether. When asked to say "the school" he said "ud kool." Instead of "pleasure" he said "penur." His speech generally was quite unintelligible. As in other cases the consonants D, T, B, P, and H were, as a rule, correctly rendered, especially as initials. They were also liable to be substituted for other sounds. His voice was disagreeable and very monotonous.

Miss Margaret Drummond, lecturer on psychology, and myself undertook the treatment of the boy, who was keenly anxious to be cured of his defective speech. As the patient had failed to learn correct articulation by the ear, he was taught by eye. The various sounds were taken up seriatim, more or less in accordance with their arrangement in Professor Wyllie's physiological alphabet, and the boy was shown how to reproduce them as is done in teaching deaf-mutes to speak. An exercise book was also gradually filled with lists of words containing the different sounds in various positions, and sentences were constructed so as to secure a frequent repetition of the required sounds. He spent half an hour every evening reading his exercises aloud to his mother, and repeated to himself at intervals during the day as many of the sentences as he could remember. These instructions were faithfully carried out, and just two months after treatment was begun Dr. Thomson saw the boy again and reported that he now pronounced all letters properly except L, W, and Y, and even those three he could articulate if made to repeat them. The boy could now speak quite intelligibly to anyone, though the letter L, which was the last to be learnt, still gave him a good deal of difficulty, especially at the beginning of a word. Unfamiliar words were still something of a stumbling-block, but if he were asked to repeat a sentence containing such words, he did not become embarrassed, but broke up the words into syllables—tackled separately as he had been taught to do. He had none of the lack of confidence of the stammerer who will write down a message he is asked to deliver, in case he may be unable to deliver it verbally. This boy was a very good visualizer, and he could "see" before him, as if in printed characters, any word which still gave him difficulty. At this time the boy could speak intelligibly and with fair fluency. His voice was still, however, very monotonous, after the fashion of an unpractised reader.

Thus the visual memory in this case, and the power to concentrate the attention, were good. Dr. Leonard Guthrie, in discussing the nature of idioglossia, says, "The subjects of idioglossia have some inherent inability to make prolonged use of the faculties of attention and observation which are necessary for the acquisition of correct speech." This boy, however, had very good observing powers, and his attention did not readily wander, even towards the end of a prolonged lesson. He had a fair vocabulary, which he could use well, and if told to describe something he had seen, he would do so in detail without prompting. On the other hand, his auditory memory was poor, and he had little or no ear for music. He could not hum or whistle music, and he declared that there was no tune he could recognize, not even the air of the psalms frequently sung at the opening of school, which he could only distinguish by the words. At present his condition continues as above described.

The symptoms in this case support the view that in idioglossia the peculiar speech is neither a persistence of

baby language nor a new tongue invented by the patient. The child's speech really represents a very defective attempt to speak his own mother tongue. The defect does not arise from any impediment in the articulatory mechanism; nor to want of intelligence; nor to lack of visual memory; nor to inattention, though these may be noticed in some cases; nor to deafness in the ordinary sense. But the symptoms are explicable on the theory that there is defective audition in the sense of some affection or imperfect development of the auditory word centre. Idioglossia would thus come under the same class of cases as congenital word-blindness. But if so, why should the former condition be readily curable (in the case of an intelligent and industrious subject), while the latter is extremely intractable or even incurable, although the intelligence of the patient may be quite normal? The explanation seems to be as follows: In cases of congenital word-blindness the word-seeing centre in the brain fails to develop under the stimulating influence, successful in the case of all normal children, of school lessons. But an efficient word-seeing centre is absolutely essential for reading, and if the affected child's reading centre has not sufficient latent capacity to undergo the normal course of development even under the stimulation of individual tuition and prolonged effort, the case is hopeless. The child cannot learn to read because he cannot develop a reading centre. In a case, on the other hand, of idioglossia the defect in the audition centre does not interfere with the child's hearing nor with his capacity to understand what he hears, but it does incapacitate him from reproducing by ear, as normal children do, the sounds transmitted to his ear. It may even incapacitate him from learning how to reproduce such sounds by ear, just as the word-blind is incapacitated from recognizing, or even in some cases from learning to recognize, word symbols by sight. But in order to teach a child with idioglossia to speak it is not necessary to provide him with a complete audition centre. There are several ways of speaking, and if the child with a defective audition centre cannot learn to speak correctly by ear he may learn to speak by the intelligent utilization of visual or kinaesthetic memories.

It may be impossible for him to learn to reproduce words correctly by means of his auditory memory, but if he cannot learn to pronounce words as they sound, he may yet learn to pronounce them as they look, not merely in books, but also as they appear on the lips of other people. Nor does the unphonetic character of our spelling present any difficulty to this theory. Recollection that "would" and "wood" are produced in the same way in speech depends upon visual memory. The auditory memory is not necessarily involved at all. In the case above described there is no reason to suppose that the original defect of audition has been cured: for, although the boy can now talk quite fluently and intelligibly when he is expressing his own thoughts, he cannot echo immediately an unusual word. If one says to him unexpectedly "Say 'mathematics,'" he has to consider what the parts of the word are and how the proper sounds have to be produced before he can tackle the word successfully. When he has got the word correctly syllable by syllable, he has then no difficulty in repeating the whole word as fluently as a normal person.

TWO CASES OF LUPUS IN CHILDREN.

BY

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THE treatment of lupus vulgaris is often so unsatisfactory, especially when the employment of the Finsen rays is impracticable, that the following two cases may be of interest:

CASE I.

G. G., aged 14, came under my care in November, 1913. In November, 1912, her condition was described as follows by the physician under whom she then was: "Tuberculosis of the nose—lower surface, surrounding the nostrils and upper lip on right side. Mucous membrane of septum and alae also involved. Duration one year. Said to have followed a blow. Weak, ill-nourished child. No phthisis in the family." She was treated for nearly a year by half-pastille doses of x rays, given about every fortnight, with ung. hyd. oleat. as a local application.

She had apparently improved considerably under this treatment. When I saw her the nose was covered with crusts, and there was a considerable area of skin on either side actively involved, the typical apple-jelly appearance being well marked. The disease also affected the nasal mucous membrane.

On December 3rd I decided to try the effect of the intensive iodine treatment. This was continued for three weeks, but the patient was somewhat intolerant, and during this period no local changes were apparent. I then prescribed Unna's urguentum viride, the formula of which is: Acid. salicyl., liq. stibii chlorat., aa 2.0; creosot., ext. cannab. ind., aa 4.0; adip. lanae, 8.0.

This was kept on with lint and adhesive plaster, and after two months considerable improvement was apparent. During the greater part of this period the patient was taking cod-liver oil internally.

On March 18th, 1914, I prescribed potassium iodide (gr. v. t.d.s.) internally, and ordered a solution of hydrogen peroxide (10 vols.) to be applied twice daily on cotton-wool to the interior of the nose. At the same time the ointment was replaced by Unna's creosote and salicylic acid plaster (Beiersdorf, No. 81). This treatment was continued until April 29th, when the condition of the nasal mucous membrane had greatly improved. The iodide mixture and the hydrogen peroxide were then discontinued, and the patient was given petroleum emulsion (5j. t.d.s.). A month later the child appeared greatly improved as regards her general health, and the nose was looking much better; there was still, however, a good deal of active tuberculous infiltration.

I then decided to try the effect of trichloroacetic acid. A small glass rod was dipped into a semisolid mass of this substance, and then pressed firmly for a few seconds on the lupous tissue. Only a small area was treated at one time. The procedure causes a little temporary pain. The applications were continued at intervals of a fortnight for two and a half months, by which time practically all the active disease had apparently disappeared. An ointment consisting of menthol (10 per cent.) in zinc ointment, had been kept applied continuously on lint, and well rubbed in at night time during the whole of this period.

When I last saw the patient (October 28th) she was apparently cured except for two tiny nodules, which I treated with trichloroacetic acid. The cosmetic result is extremely good, and compares favourably with that obtained by the Finsen rays.

CASE II.

T. C., aged 6, was brought to see me in January of this year. He had a patch of lupus about the size of a five-shilling piece on the right cheek. He had previously been treated with pyrogallol acid ointment and half-pastille doses of x rays. Part of the patch was apparently cured when I saw him; there was still, however, a good deal of active disease present.

I treated him very much on the same lines as Case I—namely, first with creosote and salicylic acid plaster, and later with trichloroacetic acid and the continuous application of the menthol ointment. He also took petroleum emulsion internally. When I last saw him (November 4th) the patch was apparently completely cured, and, as in the other case, the cosmetic result is excellent.

The value of a strong application of creosote and salicylic acid is, of course, generally known, and Unna's plaster is widely used in the treatment of lupus. I have been very impressed by the results I have obtained with trichloroacetic acid; it is undoubtedly very effective in destroying the lupous tissue, and, as has been noted, the cosmetic result is almost perfect. Whether the local application of menthol has any curative effect or not I do not know. I am rather inclined to think it has. It is undoubtedly absorbed when rubbed into the skin, for its application is followed by the appearance of a reducing body (probably glycuronic acid) in the urine, and many competent observers have testified to the value of menthol inunction in cases of phthisis. Finally, it may be noted that the general health and appearance of both cases improved very markedly as a result of the administration of petroleum, and there is little doubt that they both were subjects of intestinal stasis or intoxication.

ACCORDING to the *New York Medical Journal* Dr. Alexis Carrel, of the Rockefeller Institute for Medical Research, who has been in charge of the military hospital at Lyons ever since the war broke out, has been placed by the French Government in charge of a hospital at Compiègne in a hotel requisitioned for the purpose, which has accommodation for about one hundred patients. The Rockefeller Institute is equipping the hospital with complete apparatus for research in the bacteriological, pathological, chemical, and surgical conditions which may arise. Dr. Carrel will have a staff consisting of bacteriologists, chemists, and technicians, forming a laboratory unit, in addition to the regular surgical unit of the hospital. To Dr. H. D. Dakin has been assigned the chemical part of the work of investigation. The Rockefeller Foundation has voted an appropriation of £4,000, to be used under the direction of the Rockefeller Institute, in furthering medical research work under war conditions.