The opposite seems to hold good of iodide of potassium, so far as my limited experience goes; for I have three times seen papular and petechial eruptions produced by one-grain doses of this drug, and I should specially like to ask whether this corresponds with the observation of others.

Arsenic is usually well taken. I should have no hesitation in ordering five minims of Fowler's solution for a child six years old. Ten minims have been occasionally ordered; and I had recently under care a little girl aged ten, whose somewhat obstinate psoriasis only began to yield when the dose was pushed up to sixteen minims. When physiological symptoms present themselves, as they sometimes do, it is important to know that they do not assume the usually described type, and that vomiting is the most usual symptom. I have seen this follow a single one-minim dose; and more rarely we meet with a red and irritable tongue, dry lips, injected eyes, and abdominal pain; girls being, in my experience, contrary to the statement of Ringer, more susceptible to the overaction of the drug than boys.

Prussic acid may be pretty freely prescribed, and I have given nearly two minims to a child of two years, with some slight benefit, for pertussis; and, at the age of seven, I have given nearly three minims for the successful arrest of sickness.

We know that emetics must be given in very full doses. The intestinal canal of young children seems strangely insusceptible to the action of purgatives, and large quantities of Gregory's and compound jalap powders must be given before satisfactory action is attained.

I have by no means exhausted the instances to be gleaned from my own experience or that of others in support of my main proposition; but time presses, and I will conclude with a reference to belladonna, whose comparative harmlessness to young children has been most amply confirmed since Fuller first pointed out the fact some years ago. I have very commonly prescribed from 20 to 30 minims of the tincture for children of from fifteen months to five years, and have invariably found that the younger the child the less likely was the dose to be followed by physiological symptoms. I have on several occasions pushed the quantity up to one and a half and even two drachms of the tincture three times a day in children of from ten to twelve, with only a very tardy development of uncomfortable results; but, in my experience a few ten-minim doses are usually sufficient to cause uncomfortable dryness of the throat in adults. In children, however, we seldom have complaints of this, nor do we observe dilatation of the pupil; general languor, want of appetite, troublesome diarrhoea, perspiration about the head, and rapidity of pulse, being in them usually obscured.

I have ventured to bring these few remarks before you, as the outcome of some little observation and experience, and in the hopes of stimulating discussion on a subject which seems to afford a promising field for future investigation.

A TYPICAL CASE OF ONE OF THE FORMS OF SENSORIAL IDIOCY.*

By B. SEGUIN, M.D., New York.

THE present paper is the study of a living case of what was named, in 1843, *Superficial Idiocy*.† Dearth of observation has since prevented the further elucidation of this interesting subdivision of our subject.

Geo. C. P., now fourteen years old, was born in Boston during the American Civil War. His mother, when pregnant, felt some anxiety for friends in the field, but does not think it had any influence on the child, who was born healthy, and considered the most promising of her three children till two years old. Then, the first anomaly she noticed was an oscillation of both eyes. Previously, he seemed to have heard well, but not since. He was beginning to speak; then he stopped quite suddenly. At that time, too, he was beginning to walk quite steadily; but, as he could not see things unless very near, he would stumble over, and on going out hurt himself against the door-posts, etc. Once he had a fall down a flight of stairs, bruising his right shoulder and the right side of his face. The bruise was not open, nor the top or the back of the head apparently hurt. After a few minutes, he did not complain, and was not laid up with it at all. The mother is quite sure that this injury preceded the abnormal symptoms she soon afterwards noticed. About this time, he became restless at night; would get out of bed, and play about the room or in the next with his hobby-horse in the dark.

During this winter, he had an eruption on the face, looking like fever-sores, after which he became much better, so that in the spring he became fat and healthy-looking, not so restless at night, and finally not at all. He seemed to become anxious to learn, but his hearing and eyesight continued defective. He used to call things by names of his own, calling a chair a sit-down, etc., as a little friend of mine, when seventeen months old, called her collar her *neck*, a cat a *mieu*, and, when twenty, a hen *caco-egg*, a cow *dada-milk*, etc., by two infantile processes of nomination found at the origin of all languages. Therefore, the use of such words by Geo., when about four years old, shows him to have been at least two years backward.

Though he improved physically, he was at times puny, at times healthy; in the cold weather, his condition was better. He had no difficulty with his urine or bowels until four or six years of age. From six to eight, he had nocturnal incontinence of urine; but this disappeared under treatment. During this time, Geo. had pain in his head. His mother says his forehead was contracted at times, as if he were suffering from headache. As he grew, he became slim, with a long narrow head.

At the age of five, he went to a Kindergarten, where he learned to draw, and he has continued ever since, amusing himself principally in drawing on the black-board, but not on paper, his eyes forbidding. During this time, if at all startled, his head would rotate from side to side and his eyes would oscillate in their sockets.

He was always under the most watchful care. Attempts were made to use a deaf-and-dumb alphabet at the time when it was found he was making no progress in learning to speak. In this organographic alphabet, all words commencing with certain letters were indicated by certain signs, as M, by putting the finger in the closed mouth; N, on the side of the nose; L, near the eye. Otherwise he could not distinguish, by the little he heard, the sound of these three letters, nor hard G and K from D and T, for which some mnemotechnic indication was given him by touching the parts whence the vocals had to come, as the nose for the nasal sounds, or the chest for the aspirate, etc.

All the teaching has been at home, except during four or five years in Germany, where a lady taught him to write, the common rules of arithmetic, something in grammar and geography, and general information. There he was under the care of Niemeyer of Tübingen, who recommended to do nothing until his general health was restored and his intellect developed. Frölich gave no opinion, but was anxious to try some experiments on him for a month: the mother declined. She had already begun to educate Geo. on a plan of her own. As he could neither read nor be read to extensively, nor ask many explanations, nor hear much, nor see distinctly and afar, she determined to bring near him the world of facts and knowledge which his mediate senses could not grasp. She chose to do it in two ways: one by travels, transporting him where he could perceive what she wanted him to know and understand; the other, by substituting in his training the exercise of the immediate senses for that of the mediate senses.

Seeing him separated from the world—as by two veils—by the dulness of his vision and audition, yet in contact with the two most immediate senses, the tact and the smell, which afford great and many valuable certitudes, his mother took him literally by the hand, in order to make him feel and smell what he could not hear and see: in Germany, to breathe the atmosphere of a tranquil life; in Italy and France, to touch the monuments of art and the produce of industry; in Switzerland, to comprehend the Alps by the smell of the glaciers; here, again, to feel the home of his birth and the caresses of relatives.

But other obstacles came athwart these undertakings. If it was difficult to reach the mind of Geo. through the imperfection of the two most intellectual senses, it was fully as difficult to ascertain what his ideas were, if they were correct even if he had any, since he expressed himself almost incomprehensively with his unmanageable voice and unconscious articulations. This latter difficulty became in some manner aggravated during the course of education, when, passing from one country to another, he had to forget his English for German, and to learn his mother tongue again of late. I know this feat is not impossible to ordinary idiots, because, if their mind is narrow their ears are wide open, and there is much more of automatism than of true intelligence in what is called the faculty of language limited to the wants. But the incapacity of Geo. was of the inverse order: he would have comprehended and retained words enough, if he could have heard and articulated; and a mother's perseverance was much needed to thrice teach him to speak through defective and unfeeling organs.

Barring these difficulties of perception and of expression, Geo. was making progress on all other points. His health had become really good; his head and bladder did not trouble him; his complexion was clear; his face was bland and sweet, expectant or inquiring. His movement, somewhat jerky and tumultuous when he wanted to show

* Read in the Psychological Section at the Annual Meeting of the British Medical Association in Manchester, August 1877.

† See Hygiène et Education des Idiots in *Annales d'Hygiène et de Médecine Légale*, tome xxx, pp. 59-112, and 265-320. Paris: 1843; and *Traitement Moral, etc., des Idiots*, vol. 1, p. 734. Paris: 1845; etc.

eagerness, was rather hesitating and slow at other times. His hands, remarkably long and well shaped, were not ordinarily awkward, but searching, and, if searching with a desire, tremulous. When at work, one of them usually helped the action of the other by throwing its feelers around the object of his intended operation or study. His neck was large; his body very tall of his age, so much so that, partly from hasty growth, from having to speak to people smaller than himself, and from the necessity of looking very close at things to see them, his body had already contracted a stooping bend.

Such were the reports kindly prepared for my perusal by Dr. Satterthwaite, and such appeared to me the condition of Geo. when his mother consulted me. It was in the middle of 1876. His general health, appetite, and activity were good. He was fond of drawing; used tools; made things about the house, coarsely indeed, but carefully, as mending chairs, putting on bolts, also attending to flower-beds, shovelling snow, sawing and splitting all the wood used in the house, etc. He was swift on the tricycle velocipede, an amateur of games; kind to his playmates, who in return were considerate to him, instead of bantering him on his infirmity and his bad English, as children usually do.

Taking charge of him, I did not forget that he had, and has yet, the best of teachers: one whose intelligence of his case is equal to her tenderness. With her, it was easy to carry out the plan originally traced by Niemeyer; the more so since, in the management of idiots, I always study the signs of vitality first, and later measure on them my demands on the activity. Therefore, I simply advised the mother to continue to educate her boy as she had begun under the great master of Tübingen, watching, in the meanwhile, any opportunities of introducing such physiological means of education as observation would warrant.

The anomalies of function were evident enough in Geo.; their beginning could be traced to or soon after a fall; their period of aggravation from two to five years, when his head became narrowed and elongated. But how far was the sensorium commune affected by this pathological alteration of form? Did it become deficient *per se* in the ready and judicious use of stored impressions, or from the effects of the paucity and vagueness of the impressions transmitted? In other words: Were the hemispheres simultaneously affected with the sensory ganglia? This could easily be ascertained on the cadaver; but on the living, the road to such an analysis is more circuitous, though perhaps no less sure.

Externally, his head is of good average size, but narrow, from ear to ear elongated in its antero-posterior diameter, with a sort of protuberance rising between the brows, as seen on infants whose frontal suture undergoes a pathological growth. The base is, on the contrary, depressed; the parietals developed mainly upward; the forehead, without basic force, tends rapidly backward, and merges into the vault-line of the skull, which constitutes, with the face-line, a profile Egyptian in type, if not in purity. This form, sphynx-like in more than one sense, gives, however, a clue to lesions which the scalpel alone could uncover, but which induction can prelocate at the middle and anterior part of the base of the brain, where lie the centres and leaders of intellectual perceptions.

On the other hand, three-parts of the head of Geo. are, externally viewed, free from deficiencies of form; the frontal and nasal sinuses, the crown of the head, and the occiput, allowing ample room for their reputed functions—the olfactory, the intellectual, and the co-ordinated movements. At any rate, other heads which do good intellectual service present less harmony in these parts than the one under consideration.

Now, let us test this head by the two tests which are in our power: physiological education and experimental physiology.

Our case gave many opportunities of testing the perfection of some organs and the imperfections of others during operations which give, for primary product, impressions; for secondary, ideas; for tertiary, the embodiment of ideal in creations. For example: A solid model being given to Geo., say the cast of an animal, which he will have to reproduce in trait (its portrait), he tries to see it, but cannot by his poor sight alone form any other idea of it than that of a vague image. This general impression making him certain of the reality of the object (but of no more), he wraps it in the ample and delicate circumscription of his left hand, as in a net-work of feelings; and from this tactile survey, he derives a general notion of its forms, and of the relation of these forms to an ideal animal. (At this stage can be seen on the features a notable pose of the mind, as in the act of storing and crediting that impression in the form of an idea.) His next move is to survey the lines which circumscribe or delineate the ideal, commencing by the highest ones. In this third operation, he does not use his eyes at all, nor his hand as a whole, nor its palm as before; but the pulp of his fingers, of one, two, or three, according to the size and contour of the

object to be surveyed, adding the pulp of the thumb in apposition, so as to make a *compas-d'épaisseur* whenever he wants to measure thicknesses.

This whole survey is made by the left hand quite rapidly for a boy who is slow at almost everything else, at the same time that his right hand elaborately draws the line as it is perceived by his left. Then comes a pose, during which he tries to see if the work of the right correspond to the ideal transmitted to the cerebrum by the left. It generally does correspond so far as the trait is concerned, and oftener it does not in regard to the direction from which will depend the relation of the parts and the attitude of the figure, showing conclusively that the mental operation was correct, but the means of execution, sensory and muscular, defective. Moreover, as soon as and as far as he can see the mistake, he defaces the trait, and retraces another in accordance, not to the last localised feeling, but to the first notion he acquired from the ensemble or unity of his model.

Thus, as he progresses in his work, whenever Geo. wants to trace a line, he uses first his left fingers to feel its strength and form, and, whenever he wants to co-ordinate several lines, or a new one to some previous ones, he spreads again over the model his whole left hand, to study their direction and ajustage. This conception is executed by his right hand, through his intellect, with a will and intent to be accurate; and he succeeds so far that, whatever can be the coarseness of the execution, it always bears the intellectual likeness of the ideal.

I beg to note also that in all this his left hand, capable of surveying the lines of a solid body or a cast, was powerless to follow the lines traced by the right on a plan on the black-board. He, therefore, was obliged to use his very imperfect sight to control the doings of his right hand, at the same time that he had to rely on his sense of tact for the comparison of his ideal with his solid model, thence for its execution.

This multiplicity of instruments, and complexity of sensory and mental procedures, added to the natural imperfection of the former and to the consequent inferiority of the latter; this alternate use of the eye and hands, of the left as a feeler and of the right as an executant; of the eye again as a judge of plane images, though it could not estimate the contours of solid objects, beset the boy with difficulties of observation and of execution, such that his mind must be declared unimpaired, while progressing in spite of so many obstacles thrown on its way by its natural helpers.

Nevertheless, Geo. continues to improve. He hears and sees better every year; but worse idiots than him learn to see and hear better than he does. Is it to be said that the signs and symptoms of idiocy are futile, unreliable, as not corresponding to the gravity of the affection? Not exactly; but that the best guides to diagnosis and prognosis, in idiocy, are not so much in the gravity of the incapacity as in the importance of the organs whose affection is indicated by the wreck of definite functions. In the case of Geo., the atrophy of the organs of two senses, and the partial paralysis of those of speech, are demonstrated by the imperfections of sight, hearing, and language, as the sanity of his intellectual centres is demonstrated by the accuracy of their functions, whenever they are set in action by the operation of the senses which have remained unimpaired.

The distinction resulting from the study of this case is important, since it throws a light on the condition of many children who are, in turn, refused admission in institutions for idiots because they are considered practically blind or deaf-mute; and are ejected from the blind or deaf-mute schools as idiots. M. Magnat, Principal of the Pereire School of Paris, recently rescued two such children from this form of sensorial idiocy.

Let us now pass to the evidences furnished in support of this possible causation of this form of idiocy by physiological experiments, mainly by those of B. Gudden, Director of the Insane Asylum at Munich, described in his *Researches on the Development of the Cranium*.

These evidences are of three orders.

1.—*Influence of the Organs of the Senses on the Growth of the Cranium.*

a. If the functions of the olfactory nerve on one side in a new-born rabbit are arrested by the stoppage of a current of air, its corresponding bulb becomes atrophied, and the opposite nerve and bulb become excessively developed. Correspondingly, the cranium will have thickened around the atrophied nerve and thinned around the hypertrophied one. Persons early deprived of an eye show retraction and thickening of the corresponding orbital bone, which causes a shortening of the same side of the face.

b. By taking away one of the retinae of a new-born pigeon, the corresponding nerve and optic lobe become atrophied; and when the animal is afterwards sacrificed, the part of the cranium contiguous to the atrophied part is double the thickness of the opposite side.

c. Enucleation of one eye produces analogous effects on the arch

of the orbit (arcade orbitaire), which thereby deviates below and inside.

II.—Action of the Lobes on the Cranium.

a. Two or three days after the birth of a rabbit, the superior part of the left hemisphere was taken out; the bones were brought together and united closely; the brain began to grow up from its lower lobes in the space thus left empty, and the base of the cranium of that side took part in that upheaving, at the same time that the vault of the cranium lowered itself to join and close in with the diminished brain. Many cranial depressions may be referred to a similar process of repair and adaptation.

b. More remarkable yet is the result of extirpation, not merely of a part of a hemisphere, but of the whole. After four or more weeks, the animal being killed, the depression of the cranium is more marked than in the partial operation; and the space or vacuum, instead of being filled by a *poussée* of cerebral matter from below, is occupied by a mass of serosity.

III.—Action of the Cranium on the Brain.

a. In some American Indian tribes, among the more civilised Peruvians and Mexicans, in some departments of France, even to this day, the head of the new-born is compressed between boards, or by bandages, manipulations, and other practices. Happily, the brain, receding to some extent before the local pressure, undergoes in another direction compensatory expansions which prevent the atrophy of the brain and its worse psycho-physiological consequences.

b. On the other hand, the abnormal enlargement of the cranium, consequent on excessive training or straining of the brain, and its sequels of acute meningitis in the young and of softening in the adult subject, are too familiar to delay the conclusion of our main idea, which may be summed up, without concession to a hypothetical phrenology, in these terms: The brain and the cranium are from the beginning modelled upon each other, and subsequently the form of the cranium continues to influence that of the brain, and the *poussées* or the *collapses* of the brain continue to influence the form of the cranium.

From these three sets of experimental evidences, and from the previous physiological observation of our subject, we cannot hesitate to conclude that the lesions are located behind the basic and lateral depression witnessed by his mother; that the corresponding ganglia and nerve-expansion of audition and vision are affected; that the other parts of the brain are sound; and that his idiocy or isolation is of sensory origin.

I brought this case to your appreciation, Mr. President, not because it is unique, or even rare; on the contrary, because it is typical of a large class of sufferers from a wrong diagnosis. I choose to call this *isolation of the mind from the world by lack of intervention of the senses, or sensorial idiocy*; because—1. It distinguishes well the effects of sensory isolation from those of defective hemispheres or *mental idiocy*; 2. It opens the way for a subdivision of sensorial idiocy: (a) by *organic defects* of some of the sensory apparatus, of which I present Geo. as the type; (b) by the *functional incapacity* of some sensory apparatus (dormant function), of which Robert (*Obs. xlviii, on Idiocy*, etc., page 422) is a good example; (c) by *restraint*, inflicted previously to the acquisition of the sum of perceptions sufficient to constitute the minimum stock in trade of knowledge of an ordinary mind, of which Caspar Hauser was the most conspicuous martyr.

POISONING BY YEW LEAVES.

By T. WHITEHEAD REID, L.R.C.P.Lond., etc., Canterbury.

I HAVE read with interest "The fatal case of poisoning by Irish yew", recorded in the JOURNALS of September 1st and 8th. A case of poisoning from the same shrub has occurred in my practice this year.

H. E., a widow, aged 24, on April 9th, at 7 A.M., deliberately champed up and swallowed three large mouthfuls (representing three small sprigs) of Irish yew (*Taxus fastigiata*), which she had gathered at 8 P.M. the previous day, having gone supperless to bed. At 7.30 A.M., she drank a cup of tea. At 8 A.M., she began to feel sick, and drank a second cup of tea. At 8.30 A.M., she vomited for the first time. Between 9 and 10 A.M., she fainted, vomited three or four times, became insensible, and was finally found on the floor in a state of collapse. Salt and water were administered as a domestic emetic.

At 1.15 P.M. (six hours after eating the leaves), I first saw her. The symptoms were those of syncope: pallor of face, lividity of lips and eyelids; vomiting from time to time; partial unconsciousness; very marked irregularity and depression of the heart's action, with a small thready pulse, at times imperceptible, at times frequent, of short duration, small volume, and diminished power; the heart's action was very feeble and undulating, its sounds indistinct, yet the ventricular

systole not interrupted enough to cause a dicrotous pulse. The pupils were widely dilated, though they acted slightly to light. The tongue was moist and tremulous, stained of an uniform brown colour. The respirations were shallow, irregular, often sighing. The skin was cold and bathed in perspiration. She was able to be roused, and could answer questions sensibly at intervals, but eventually coma ensued. There were no spasms nor convulsions, though twice I noticed a slight tremor come over her frame. She was restless at times, turning from side to side in the bed. There was no headache, tenderness of stomach, nor diarrhoea; no paralyses, nor any rash on the body.

At 2 P.M., the stomach was washed out by means of a pump until the washings were colourless; portions of leaves and stalks, but no food, appeared. By 3 P.M., she had considerably roused from her collapse; a mustard poultice, hot bottle, warm clothing, sal volatile, and brandy did still more for her.

By 6 P.M., an intense thirst had arisen. She took three large cups of hot tea with milk, which produced copious vomiting, more portions of leaves and stalks appearing.

At 9.30 P.M. (fourteen hours and a half since the poison and seven since the stomach-pump), a great improvement had taken place in her condition. The skin was warm and moist; the temperature 98.3 deg.; and the pulse regular as to rhythm, though not to frequency, the beats varying between 80 and 96 per minute. There were headache and thirst. The vomited matters had become duodenal in character, being more tenacious, and containing bile and food as well as leaves, the sharp points of which were well embedded in mucus; she had vomited four times since 6 P.M. The patient's memory was a blank from 10 A.M. to 4 P.M.; she did not even recollect the stomach-pump.

Her catamenia commenced in the morning prior to eating the leaves. She held her urine all day and until 6 the next morning. Milk and brandy were frequently administered. She slept lightly during the night. The case progressed to a favourable termination. The pulse remained very irregular in frequency (accompanied by sensations of "heart-stopping") for three days, varying between 55 and 92; its rise was quick and volume diminished. The temperature never exceeded 99.9 deg. The headache disappeared on the 10th at 1.15 P.M. The thirst continued till the evening of the 11th, and the staining of the tongue lasted four days. The bowels (which had been confined for two days previously to taking the leaves), by means of castor-oil, acted on the 10th, at 6 A.M. and 2 P.M., the stools containing portions of leaves and stalks, as also on the 11th, at 4 A.M., when some oily matter of a greenish hue and a small blood clot were noticeable. The urine, which measured four pints in the twenty-four hours on the 12th, varied in specific gravity from 1011 to 1017, contained uric acid in abundance, with large crystals resembling cystine in appearance, as well as lozenge and halbert-shaped ones of all sizes; there were variable amounts of albumen and phosphates during the eight days that it was examined. By the 18th, she had returned to her usual state of health. One of the mustard poultices applied to the nape of the neck slipped down to the posterior border of her left scapula, and made a raw surface of the size of the palm of a hand, which was very slow in healing.

In conclusion, I may add my conviction that this woman would have died but for timely treatment. There was a very marked improvement in her condition after the stomach was washed out, though even then she was prone to relapse into her former lethargic condition; and the necessity arose for more active measures to keep her awake, though these again were soon able to be discontinued. The vomited matter was neutral to test paper.

The cases on record of poisoning by yew leaves are few. Putting aside the suicide of Catiolucus, related by Caesar (*Comment.*, lib. vi, sec. 31), Dr. Percival, in *Medical Commentaries* (vol. vi, page 33), relates the death of three children in 1774, who were killed by the fresh leaves, the dried ones having no effect; but he did not see them till after death. Dr. Mollan brought before the Dublin Pathological Society's meeting, on March 22nd, 1845, the case of a lunatic who died in fourteen hours, at the Richmond Asylum, after chewing this plant. (*Dublin Hospital Gazette*, No. 7, May 15th, 1845, page 108). A death, ascribed to an infusion of the leaves, is registered between 1838 and 1839; and one is mentioned in the *Edinburgh Annual Register* (vol. vii, page 162). Metzger mentions (page 397) two cases of death from the leaves and berries. Though an alkaloid, "taxin", has been extracted, it must not be forgotten that there are probably other active principles as well; neither must we overlook the physical features of the little leaves, which give them irritant properties and cause them to adhere tenaciously. Peretti analysed the leaves in 1828 (*Journal de Pharmacie*, tome xiv, page 537). Orfila classifies yew as a narcotic poison (vol. ii, chapter iv, page 165, edition ii, 1821). Pereira calls it acro-narcotic, and says it holds an intermediate position between savin and foxglove. Schroff has pointed out the analogy between poisoning