with blood serum and with a standard solvent containing 0.5 gr. sodium chloride, and 0.2 gr. sodium bicarbonate in 100 c.c.m. of distilled water. He found that each, at the temperature of the body, dissolved 1 part in 500 of uric acid, sodium biurate being only about one-twentieth as soluble. The chemical action involved is the conversion of the uric acid into quadriurate by the sodium carbonate present, the excess of which effects a further conversion into biurate, which, on account of its less solubility, is eventually precipitated.

Sir William Roberts infers from these results that, in the normal state, uric acid is primarily taken up in the system as quadriurate, and that as such it circulates in the blood. The detained quadriurate, circulating in a medium rich in sodium carbonate, is gradually transformed by the latter into sodium biurate, and as this form is almost insoluble, precipitation of it occurs or is likely to occur.

The reason that in leucocythæmia and other blood diseases no uratic deposits occur is that the uric acid produced in the various organs or tissues is discharged into the blood as a quadriurate; and as this requires some hours for its maturation before it is possible for it to deposit sodium biurate, there is abundant time for the kidneys to eliminate it provided these organs are sound. In connection with gout, if the view is correct that defective elimination of uric acid by the kidneys always occurs, the conditions are quite different.

SEATS OF URATIC DEPOSITS IN GOUT.

Uratic deposits are found almost exclusively in structures belonging to the connective-tissue class—in cartilages, ligaments, tendons, and in the cutaneous and subcutaneous connective tissue. They are conspicuously absent from the muscular tissue and from the substance of the liver, spleen, brain, and lungs. Uratic deposits have been very occasionally found in the following places: In the mitral and aortic cardiac valves, in atheromatous patches in the aorta, in the walls of veins, in the crico-arytenoid ligaments, in the vocal cords, in the walls of bronchial tubes, in the mucous follicles of the pharynx, upon the meninges of the brain and spinal cord, upon the spinal nerve sheaths, in the sclerotic coat of the eye, and the fibrous envelope of the retina. It is always in the fibrous tissue which participates in the formation of the nervous envelopes that the deposit is found.

Anatomical Seat of the Deposit in Cartilages.—The uratic deposit first occurs in the central portion of articular cartilage—a point farthest from the network of nutrient capillaries and a point where nutrition is more easily retarded. It is also probably the point of greatest pressure, hence a long walk, a dance, or similar violent exercise may precipitate an attack of gout.

Ebstein states, as the result of the examination of a typical gouty knee-joint, that directly under the surface of the cartilage a very shallow tissue layer exists in which crystals are wanting, and in the layer immediately beneath this the crystals are most plentiful. He agrees with Sir Alfred Garrod that only two-thirds of the thickness of the cartilage is usually infiltrated, although exceptionally—as shown by Cornil and Ranvier—the whole cartilage may be infiltrated.

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An effort is being made throughout the country to raise a children's tribute towards the Queen's Commemoration Fund for the Queen's Jubilee nurses. The fund has already reached the sum of £30,000. A lecture entitled "The Children's Story of the Queen's Reign" will be given in the chief provincial towns. The Duke of Westminster has given the use of Grosvenor House for the first lecture on Monday, March 29th.

AUDITORY APHASIA WITH AMUSIA.

By P. BLAICKIE SMITH, M.D.,

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BEFORE entering upon a description of the case which is the subject of my paper, I think it advisable, for the better comprehension of what is to follow, to refer briefly to some points in connection with auditory aphasia.

Auditory aphasia—more commonly known as word deafness—includes those disorders of hearing and speech which result from destruction, partial or complete, of the posterior half of the first temporal convolution on the left side. This convolution is the storehouse for the sound images of words, and hence, when it is destroyed, the power of understanding spoken language is lost. The patient is not deaf—he hears quite well, but he fails to understand. He hears language as sounds, but he cannot comprehend their meaning. He is in the position of a man listening to an unknown tongue; he hears the sounds of the spoken voice, but he is unable to interpret their significance.

But auditory aphasia may include something more than word deafness. Not only does the patient fail to comprehend spoken language, but he may have lost the power of producing language. The word storehouse is destroyed or isolated, and he cannot therefore reproduce in the form of spoken language the thoughts that arise in his mind; he has, so to speak, forgotten how to speak, and his attempts at speech merely result in the emission of an unintelligible jargon, "gibberish aphasia," or, short of this, in efforts which reveal a very greatly diminished vocabulary, and a failure to recognise the true meaning of the words to which he gives utterance.

Agraphia is frequently present, but though the patient cannot write, just as he cannot speak, yet he may copy what is placed before him, for he generally comprehends word symbols—that is, he is not word blind.

Occasionally the musical faculty, which seems to reside in the left first temporal convolution, is lost or sensibly impaired.

In auditory aphasia, then, there may be defects in the reception or interpretation as well as in the production of spoken language, and agraphia and amusia—musical aphasia—may coexist.

DESCRIPTION OF CASE.

The patient, a man aged 51, by occupation a seaman, was admitted under my care in the Aberdeen Royal Infirmary on March 19th, 1895. His history, obtained mainly from his wife, was as follows: For some years back he had suffered from breathlessness and palpitation of the heart, and a year ago he became so breathless and ill that he sought admission into the Aberdeen Royal Infirmary. During his stay in hospital (he was not then under my care) his symptoms pointed to cardiac weakness, for the heart's action was feeble and irregular, the sounds were faint but free from murmur, and there was much cyanosis and dyspnoea. After a short stay in the infirmary he was discharged greatly improved, and he soon resumed his occupation as a sailor. He continued in fair health until February 11th, 1895, when, on the afternoon of that day, while at sea, he suddenly became dazed and stupid, and found that he could not understand what was said to him. He remained in this condition for several days, during which it was discovered that he could neither read nor write. He often attempted to read, but it was evident that his efforts were fruitless, for he was frequently observed to be puzzling over a book or newspaper, which he held as often as not upside down in his hands. He rarely spoke, and when he did speak his language was at times not at all intelligible. After a few days the power of writing and of reading (silently as well as aloud) was restored, and voluntary speech returned to a considerable extent, but no improvement was manifested in his hearing. At no time of his illness did he lose consciousness, nor was there ever any evidence of paralysis.

On admission his expression resembled that of a deaf man, but he was not deaf, for if asked (in writing) whether he heard conversation he stated that he heard a sound, but that he did not understand what was being said. At the same time he was not absolutely word deaf, for when requested to

put out his tongue, or shut his eyes, or hold out his hand he usually performed all these actions correctly if addressed slowly and distinctly and in monosyllables. It was manifest that his comprehension of spoken words was aided by the close watch which he kept on the lips of the speaker, for if the same phrases were repeated in such a way that he could not see the face of the person addressing him he at first completely failed to comply with the requests made. It was interesting to note that after a few trials he seemed to become acquainted with the sounds, and readily did what was required of him. Any attempts to engage him in ordinary conversation were futile, and invariably elicited the reply: "I hear you, but I don't understand what you say."

Notwithstanding his difficulty in comprehending spoken language, there was no impairment of ordinary hearing. He heard and recognised a watch ticking at a considerable distance from either ear, and he recognised and named everyday sounds, such as the noise of street traffic, the bark of a dog, a railway whistle, and the noise produced by poking the fire. He seldom spoke voluntarily, but when he did his articulation was perfect. His remarks were always short and simple, apparently his vocabulary was small, and every now and then he would misapply a word. He could write readily and distinctly, and he read aloud with ease and with intelligence. When shown various objects, for example, watch, pencil, penknife, and coins of different values, he could name them all correctly and without hesitation. His musical faculty was impaired. Previous to his illness he could sing to some extent, and was fairly well acquainted with Scotch and other melodies, but when tested at the organ soon after admission he failed to recognise such well-known airs as "Auld Lang Syne" and "We're a' Noddin'," and was equally at a loss with the "Old Hundredth" and "God Save the Queen." The only air with which he showed familiarity was "Comin' thro' the Rye," and this he hummed with tolerable accuracy. He recognised by sound that the musical instrument which was played was an organ, and he could distinguish sacred from secular music. His intelligence seemed unaffected, and his memory, though good for past events, was miserable as regards the present. He was emotional, and easily depressed by trifling occurrences. Nowhere was there evidence of paralysis. The movements of the pupils and eyes were normal, and the appearance of the discs was natural. All the reflexes were in perfect order. The sounds of the heart were feeble but free from murmur; the left ventricle was slightly dilated; the arterial system as indicated by the condition of the superficial arteries, was atheromatous. The urine was healthy.

During the patient's stay in hospital his condition decidedly improved. At first he seldom spoke, but latterly he expressed himself with considerable freedom and fluency. He frequently volunteered remarks, and he rarely misused a word. His power of comprehending speech also increased to a certain extent, but it was still very defective when he left the infirmary on April 11th. The treatment which I adopted consisted mainly in attempts to remedy the imperfect perception of speech by speaking to the patient slowly and distinctly, and by the repetition of short words and phrases, exactly as one would do in trying to teach colloquially a foreign language.

Since the foregoing was written I have again examined the patient. He was still partly word deaf, and also, I fancied, a little deaf to ordinary sounds, but his faculty of expression had evidently further improved since he left the hospital. His speech was wonderfully accurate; only once or twice did he fall into error, using the word "pacified" for "satisfied," and "extinctly" for "distinctly." He told me that he had been to church the day before, but that he could only now and then comprehend what the preacher was saying though he heard his voice distinctly. With the view of verifying this statement I read to him a few sentences taken at random from a book, and I found that he could not understand a single word that I said.

On testing his musical faculty, it was at once apparent that a marked improvement had taken place since its condition was last investigated. He now recognised the "Old Hundredth" and "Auld Lang Syne," singing a few bars of the latter air, and he stated that other tunes which were played were quite familiar to him, though he had forgotten their

names. But his musical capacity could hardly be considered completely restored, nor could his powers be pronounced absolutely satisfactory, for, after listening attentively to "God Save the Queen," he came to the conclusion that the air which he heard was "Auld Sang Syne," with variations!

In commenting upon this case I would first direct attention to the account given of the onset of the symptoms. Clearly on February 11th a pathological lesion, some hæmorrhage or softening took place in the patient's left brain, resulting in the production of auditory and visual aphasia along with agraphia—he could not understand language, he could barely speak, he could not write, and he was evidently unable to read. In a few days agraphia and visual aphasia passed away, but the auditory aphasia persisted, thus indicating that the lesion must have involved the left auditory centre, and that the visual word centre had suffered only from the inhibiting effects of the injury in the neighbouring convolution.

On reviewing the symptoms previously detailed it is apparent that the case is far from being one of complete auditory aphasia. The patient has considerable powers so far as the production of language is concerned, but his capacity for understanding speech is greatly diminished, and his musical faculty is still capable of further cultivation. In all probability the symptoms are the outcome of a lesion which has damaged but not destroyed the left auditory centre, thus bringing about the changes which I have already detailed.

Lastly I would draw attention to the improvement which has taken place in the patient's condition since he first came under notice. This observation is in keeping with what seems to be a well-established fact—namely, that of all the forms of aphasia the auditory variety is the most susceptible of amelioration or cure, a circumstance believed to be due to the faculty possessed by the right auditory centre of acquiring through a process of slow education the special functions located in the corresponding convolutions of the opposite side.

[Shortly before leaving Aberdeen for San Remo I had another opportunity of examining the patient whose case is related above. He was then free from aphasic symptoms and there was no evidence of amusia.]

CASE OF PTOMAINÉ POISONING FROM EATING TURKEY.

By E. S. WORRALL, M.R.C.S.Eng., L.R.C.P.Lond.,
Crouch End.

On February 15th, at 6.20 P.M., I received an urgent call to Mrs. M., and found her in a collapsed condition, cold and clammy, the pulse 75, and the pupils contracted. I was unable to arouse her so as to obtain any answer to questions. There were no signs of injury from a fall or blow, no typical smell in the breath, and on looking carefully round the room I could find nothing to account for her condition. On questioning the servant and the mother's help, who were in the house all day, I found that Mrs. M. had not been well on the previous day, February 14th, when she complained of pain in the abdomen and vomited three times; and on the morning of February 15th she had vomiting and diarrhoea, and complained of pain in the abdomen. She took no breakfast and no food whatever that day, but a half-wineglassful of coca wine in the morning and about midday a little brandy and water, vomiting immediately after. About 2 P.M. she went to lie down on the sofa, where she remained till after the children came from school, about 5 P.M. Soon after she was heard to call out to her daughter, who went to her and found her on the sofa, and was alarmed as her mother seemed very ill, and could not talk properly. Later on I was sent for as above stated.

On further inquiry I ascertained that they had all been unwell after eating turkey at 2 P.M. the previous afternoon. The cook informed me that the turkey seemed all right when she was preparing it for roasting, but that when it commenced to cook she noticed it had an unpleasant smell, and the husband of the patient remarked on this when it was brought to table. All, however, seem to have eaten some of the bird, and Mrs. M. ate very little, but partook freely of