

as Cheyne-Stokes respiration and we may read how two thousand, two hundred years ago, "Philiscus, who lived by the Wall" took to his bed with an acute fever and as he grew worse and came towards his end, "his respiration was throughout like that of a person recollecting himself, was rare (namely few in number) and large."

We now pass over a period of four hundred years and we come to the next hint of auscultation in a passage in the works of Aretaeus of Cappadox, known as the "Incomparable Aretaeus" who lived between 30 and 90 A.D. Cappadocia was a province of Asia-Minor and the Cappadocians were evidently not popular with their neighbours, the Greeks, for in the anthology we find this couplet:

A viper bit a Cappadocian's hide;

But 'twas the viper, not the man, that died.

In his chapter on syncope Aretaeus talks of "a bruit of the heart, pulse small and feeble, with violent palpitation." Laennec tells us that the perusal of the works of Aretaeus gave him another hint which ultimately led to the discovery of auscultation.

Hippocrates held the opinion that the heart could not be diseased, but Aretaeus credits the heart with far greater pathological importance than any previous author and syncope he describes as a cardiac affection. Aretaeus occasionally speaks of a species of tapping of the abdomen with the hand—perhaps a variety of percussion. His descriptions of phthisical patients show the acute observer and are well worth reading in this twentieth century. Let me quote:

Voice hoarse, neck slightly bent, tender not flexible, somewhat extended; fingers slender, but joints thick, the nails of the fingers crooked, their pulps are shrivelled and flat.

Again:

The habits most prone to the disease are the slender; those in which the scapulae protrude like folding doors or like wings; in those which have prominent throats, and those which are pale and have narrow chests.

Aretaeus was superior to most of the superstitions of his time, yet alas even Homer nods. His description of the uterus is most fantastic. Here it is:

In the middle of the flanks of women lies the womb, a female viscus, closely resembling an animal, for it is moved of itself hither and thither in the flanks, also upwards in a direct line to below the cartilage of the thorax; and also obliquely to the right or left either to the liver or spleen; and it likewise is subject to prolapses downwards and in a word, is altogether erratic. It delights in fragrant smells and advances towards them; and it has an aversion to fetid smells, and flees from them; and on the whole the womb is like an animal within an animal.

William Harvey, the immortal discoverer of the circulation, talks of a pulse which can be heard in the chest, but it is not until 1761, nearly 1,700 years after Aretaeus that Auenbrugger published his great work on percussion.

The physical diagnosis of our day took its origin in the eighteenth century and as the German historian Baas says: "The corner-stone of all modern diagnosis was Auenbrugger's percussion."

Leopold Auenbrugger was born at Graz in Austria in 1722. After studying for some years in his native

city he pursued his medical studies in Vienna. For some years he engaged in private practice and obtained a hospital appointment which he accepted in order to be able to carry out his researches. His marriage with a rich and beautiful girl also placed him in an independent position.

His invention was made during his hospital service. For seven years he tested his system of percussion before publishing his great work the "*Inventum Novum*" in 1761. During his lifetime it remained unnoticed, misunderstood and even designedly opposed and the leader of the Vienna School at that time, De Haen, was the leader of the opposition. Auenbrugger foresaw opposition. He says:

I have very well foreseen that I shall meet with great opposition as soon as I have published my invention, for envy, malevolence, hatred, jealous disparagement and even slander have never been wanting to men who have either glorified or perfected the sciences and arts by their discoveries.

How true these words are. The way of the innovator in the medical profession is hard and the history of our profession tells us only too plainly that most of the opposition comes from within.

Auenbrugger's discovery was based on the simple observation that "the chest of the healthy man resounds when it is percussed." He tested this idea for seven years and then introduced his great book with the following words:

I lay before you, benevolent reader, a new sign for the elucidation of the diseases of the chest, discovered by me. This consists in the percussion of the human thorax, by the varying resonance of whose tones a judgment may be formed as to the internal condition of this part. I have written what I have again and again proved by the testimony of the senses with much labour and fatigue; nor have I ever given place therein to seducing self-love.

He concludes his book by saying:

May what I have written conduce to the comfort of the unfortunate sick, and to the advantage of true cultivators of the medical art; such is my desire.

Fortunately Auenbrugger was of an equable temperament and, finding that his invention was not accepted, he did not become embittered, but devoted himself to music and the arts and wrote an opera called "The Chimney Sweeps." He lived to a ripe old age and died in 1809 aged 87.

The credit for the recognition of the great discovery of Auenbrugger rests with a great French physician Jean Nicholas Corvisart, a native of Dricourt in Champagne.

In 1808 he translated Auenbrugger's treatise into French and gave all the prestige of his own position to maintaining the priority of Auenbrugger. He says in his translation:

I know very well how little reputation is allotted to translators and commentators, and I might easily have elevated myself to the rank of an author, if I had elaborated anew the doctrine of Auenbrugger and published an independent work on percussion. In this way, however, I should have sacrificed the name of Auenbrugger to my own vanity, a thing which I am unwilling to do. It is he, and the beautiful invention which of right belongs to him, that I desire to recall to life.

Corvisart came to Paris and studied under Vicq d'Azyr, Portal, Petit, Louis and other leading

teachers of the day. He became one of the physicians of Napoleon who in this appointment gave evidence of his proverbial insight into practical capacity and greatness of character. Corvisart was faithful to Napoleon through all his vicissitudes and after Napoleon's death declined all public offices. Perhaps I may quote an anecdote which illustrates Corvisart's independence of character. Soon after the birth of Napoleon's son, the King of Rome, Corvisart in conversation with the Emperor, exclaimed:

Sire, this prince must crown all your wishes! Recall your career: In less than ten years a simple officer of artillery, then captain, general of brigade, general-in-chief, First Consul, Emperor, spouse of an arch-duchess of Austria, father of a prince. Having reached so dizzy a height of fortune, rarely attained by any mortal, I beg your majesty to stop. Fortune may turn; you may yet fall.

"That I call the speech of a genuine peasant" said Napoleon, yet his opinion of Corvisart was expressed as follows: "He is an honest and able man, but a little rude."

Corvisart's chief work was "Essay on the Maladies and organic Lesions of the Heart and great Vessels," which was first published in 1808. Corvisart was the teacher of the great French physicians Bayle, Laennec and Dupuytren and exercised a far-reaching influence on the medicine of his time. He died of a disease of the heart in 1821.

Of Laennec, the great pupil of Corvisart, you have already heard tonight and I will pass on and say a few words about some of the men who helped to popularize among the profession the inventions of Auenbrugger and Laennec.

Of Pierre Charles Alexandre Louis, Osler has given us a vivid picture in his charming essay. He was the logical successor of Laennec. A great teacher and was renowned for his integrity and honesty of observation. His motto was: "To observe well, we must not observe hastily" and so he spent three to five hours daily in the hospital wards and in the post mortem room. His was a mathematical mind and his writings are compilations of minute observations. Louis was the first clinician who counted the pulse as a routine procedure. In 1825 he published his "Anatomical Researches on Phthisis." Of this work Osler says:

I do not know of any single work on pulmonary tuberculosis which can be studied with greater profit to-day by the young physician.

The great successor of Auenbrugger as an exponent of the art of percussion was the Frenchman, Pierre Piorry, who in 1826 invented the pleximeter for the practice of mediate percussion. He was a man of fertile brain who invented many new names for diseases, most of which have not outlived him.

The influence of the work of Laennec and Auenbrugger was felt at this period all over the world and two of the leading exponents of these new methods were the two Irishmen, Robert James Graves and William Stokes.

Graves has been said to have bridged the impassable gulf which before his time lay between the student and teacher. To us he is known by his

description of exophthalmic goitre. Personally he was a man of great natural wit and it is related of him that while on a visit to Rome, he was much annoyed by vermin that infested the beds. He remarked:

A certain friend of mine was so tormented by their bites that when visiting the Capitol he flung, in a fit of rage, thirty of the ringleaders headlong down the Tarpeian rock.

Again when inveighing at the then system, or rather lack of system, in the training of students, he said:

Often have I regretted that under the present system, experience is only to be acquired at a considerable expense of human life. The victims selected for this sacrifice at the shrine of experience generally belong to the poorer classes of society, and their immolation is never long delayed when a successful candidate for a dispensary commences the discharge of his duty.

William Stokes founded his life work on the following aphorism:

If you would advance knowledge, be content to take up the thread where the last investigator laid it down, and set yourself to carry on his work.

Stokes did more for the advancement of physical diagnosis of the diseases of the heart and lungs than any other man of his time. He was the great advocate of the use of the stethoscope and it was largely through his teaching that the new instrument came into general use in Great Britain. Stokes was the first to suggest the use of the finger as a pleximeter in percussion. Let me close my remarks on this great man by quoting his opinion of the optimism of tuberculous patients.

The destruction of the lung causes a relief to the patient and too often may we hear the voice of hope and confidence reverberating in the cavity which seals the patient's doom.

Many other great names might be mentioned, but time will not allow, but a few words may be allotted to Josef Skoda, who brought to bear his knowledge of acoustics and music on the problems of medicine. Skoda looked on mankind as a subject for diagnosis and when asked on one occasion after seeing a patient, what treatment he advised, replied "*Ach, das ist ja alles eins*"—Oh, that is immaterial.

Skoda loved to study what he called the "natural course of disease undisturbed by therapeutics."

This concludes what I have to say and I would now like to show you some portrait slides of the men who have slowly and laboriously made the discoveries which have enabled us to diagnose diseases of the heart and lungs and who have cast some rays of light into the darkness, so that perhaps we need not say as did that physician in the early days of last century, when asked why he was retiring from practice. His reply was that he was tired of guessing.

LEPROSY PROBLEMS.

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I FEEL myself under an obligation to comment upon the paper read by Dr. Molesworth upon leprosy in Australia, yet it is not without a great deal of diffidence that I attempt to do so. While I

feel that the arguments advanced by him to show that racial immunity is a sufficient safeguard against leprosy to the British community here are fundamentally unsound, I find it difficult effectively to counter them without appearing to attempt the discredit of his valuable work. Actually, nothing is further from my intention. On many points we are in agreement, particularly in that we both advocate the alleviation of the distress attendant upon forcible segregation of the afflicted. I believe, nevertheless, that Dr. Molesworth has committed an error of judgement in concluding that leprosy does not constitute a menace to the European population of Australia. This error, moreover, I believe to be due to the fact that he has permitted himself a licence to which he was not entitled, in interpreting evidence collected in a non-endemic area. Such ardour it must be admitted has not been without parallel in the advocates of strict anti-leprosy measures, but it is doubtful upon which side it constitutes the graver error.

I agree with the writer that elimination of the susceptible is a real factor in the production of a relative racial immunity. This concept is not new and has been used to explain the early virulence of infection in the Pacific Islands and its subsequent decline after a phenomenally extensive dissemination. But that this factor alone can have been responsible for the decline in Europe and more particularly in Britain is not apparent from the examples chosen by Dr. Molesworth for the elaboration of his point. One would have supposed, were it so that in India and China where the malady has raged longest unrestricted by any prophylactic measure, a much greater racial immunity would now be apparent than is found in those European countries where its appearance was much later and its course of comparatively short duration. Moreover, even in Europe the disease is still prevalent in those countries where the advance of civilized hygiene, personal and civic, has been tardy. According to Ivanow and Mamouw 1,026 lepers were reported in certain limited areas of European Russia between the years 1902 and 1909; according to Awide and Mendoza in Spain there are not less than 1,500 lepers, mainly in the Provinces of Galicia, Valencia and Andalusia.

In any event a comparison of the incidence of leprosy in Australians of European race with its incidence in coloured races must take cognizance of the fact that in Australia the sources of infection are as yet comparatively few and have been promptly isolated when recognized, whilst in the Pacific Islands (for example) the sources of infection are multitudinous and until recently at any rate were free to move indefinitely amongst the general population. The development of the argument as to the incidence of leprosy in Australian whites, furthermore, is most confused and largely on this account no doubt has Dr. Molesworth succeeded in lulling himself and his auditors into a false sense of security. It is patently erroneous to gauge the incidence of leprosy in Australia by correlating the number of infections with the total population of the continent. And yet it would appear that his case

against segregation is largely based upon the assertion that in Australia only sixty-six European lepers are known amongst a total population of six millions, whereas one hundred and forty-nine were found amongst the coloured population of under one hundred thousand.

In this latter connexion it must not be overlooked that leprosy was introduced by coloured aliens and for a considerable period had unlimited opportunities of becoming endemic amongst both them and the aborigines with whom they associated, whereas the lack of any disposition towards inter-racial intercourse which is a feature of Australian national character, has been a potent factor in protecting the whites in areas from which many coloured lepers have been reported. When, moreover, leprosy appeared in the white sufficiently frequently to attract attention, prompt and severe prophylactic precautions were taken to prevent its further dissemination. It cannot be gainsaid that these factors have exerted an important influence in determining a heavy relative incidence in coloured races no less effective than an admitted predisposition.

Furthermore the bulk of the coloured population has been imported to or is resident in tropical Australia, while the greater part of the white population is in the more temperate southern portion. The races are not proportionately exposed to infection, the white race being chiefly distributed in non-endemic areas, while coloured races are found principally in localities favourable to the dissemination of infection and in comparatively frequent association with infected persons.

In assessing the incidence in whites, no attention has been paid to this important point. No step has been taken to eliminate that great proportion of our population which for various reasons (residence in an unsuitable environment or in one to which the malady has never been adequately introduced) has never been exposed to infection by contagion. It has been assumed that all citizens of the Commonwealth have been equally exposed and we are seriously asked to believe that the European population of Victoria has escaped infection by reason of the existence of a racial immunity in British stock, while in the State of Queensland where there is but half the population, leprosy is known to be endemic in whites. That in reality the possibilities of dissemination amongst whites are much more serious than Dr. Molesworth would lead us to believe, is indicated by the fact that at Mount Morgan and Rockhampton the incidence is not less than one *per mille* and yet it is certain that in consequence of the operation of the *Leprosy Act* not one-quarter of the population of those centres has been exposed to leprosy. From the Northern Territory where there are less than a thousand persons of European descent living in endemic areas six white lepers have been reported in the last few years without any special effort having been made to determine the number actually in existence. Admittedly leprosy is rare in Australia at the present time, but it is not incapable of alarming dis-

semination if permitted the licence advocated by Dr. Molesworth.

It is lamentable to see raised again the question of the relative incidence and comparative prophylactic methods directed against leprosy on the one hand and tuberculosis and syphilis on the other. Are the prevalence of the latter afflictions and our incapacity to deal with them cogent reasons why we should deliberately add to the suffering of our people by permitting the unlimited dissemination of yet another plague more particularly when we know this one may be readily controlled. Leprosy once prevalent in New South Wales as an endemic disease is now virtually extinct. Indeed this is the explanation on the one hand of that very absence of severe cases from Little Bay upon which Dr. Molesworth lays such stress, and on the other of the fact that Dr. Molesworth's own patients as far as we are informed of them may be regarded as importations from other States and countries. No one can for one moment believe that the brief New South Wales outbreak exhausted the possibilities of the non-immune population. Leprosy is no longer a problem in New South Wales because adequate steps were taken by notification and isolation to eradicate it. On the other hand it persists in Queensland because these steps though properly devised are imperfectly administered. Dr. Carlos Chagas in his report to the Health Committee of the League of Nations states: "This disease (leprosy) is prevalent upon a vast area of the globe; in certain countries it has an acutely endemic character and threatens to spread from its present centres to areas which have hitherto been immune." Marchoux reporting upon leprosy in France says the disease is dying out and may be expected finally to disappear: "always provided the increasingly numerous importations from abroad do not revive its activity in moribund endemic centres and lead to the infection of new ones." Prophylaxis against leprosy has been proved successful time and again in Australia and cessation of effort in this direction now would be a national calamity.

I believe I am not less solicitous for the amelioration of the leper's lot than is Dr. Molesworth, yet I cannot admit that there is any justification for permitting the unfortunates now afflicted unrestricted liberty to broadcast their infection to the misery of others. I believe the solution of the problem lies in the provision of extensive and adequately equipped leprosaria in non-endemic areas. Without these efficient specialized treatment will be impossible and I am not to be convinced that, given sufficient elaborate and comfortable accommodation, compulsion is not an advantage to the patient himself. Dr. Molesworth himself mentions the necessity of pressing specific treatment to the point of unpleasant and sometimes dangerous reaction. All who have had any experience of the treatment of lepers in lazarets, have found that the necessity for this reaction is the commonest cause of the patient refusing treatment. Without compulsory segregation continuous and effective treatment of lepers would be impossible. Continuance of the present system in Queensland is absolutely necessary, but

it is admittedly highly desirable that a prompt and genuine effort be made:

(a) To hasten the successful termination of the system by a thorough investigation into the incidence of the disease for the purpose of insuring the isolation of all patients deemed infective;

(b) To ameliorate the condition of those isolated by the provision of improved lazarets and inaugurating a system of leave parole for patients who have responded to treatment;

(c) To provide for the outdoor treatment of lepers found in non-infective stages and for the regular reexamination of contacts and discharged persons.

I trust I have succeeded in demonstrating the fallacies of Dr. Molesworth's arguments against compulsory notification and isolation and in pointing the necessity for continuance upon an improved system, particularly as I believe some degree of compulsion is not incompatible with the patient's best interests.

Reports of Cases.

PERISINUS ABSCESS.¹

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A MALE patient, aged thirty-one years, a clerk, was admitted to hospital on July 26, 1926, complaining of a discharge from the right ear. His temperature was 39.3° C. (102.8° F.) and his pulse rate was 116 in the minute.

For three days before admission he had complained of pain in the right temporal region and behind the ear. He had had several shivering attacks. He had vomited, but had not complained of vertigo. His throat felt sore.

On examination slight tenderness was discovered over the mastoid on the right side, but no oedema was present. Hearing was diminished. Weber's test was lateralized to the right side. The response to the Rinne test on the right side was "negative." A large perforation of the drum, filled with cholesteatoma, was found. A provisional diagnosis of lateral sinus thrombosis was made.

Immediate operation was carried out under ether anaesthesia. The mastoid bone was found to be sclerotic except for one or two cells in the attic region which contained pus. Eradication of these cells led to the exposure of the *dura mater* of the middle fossa. No change was seen in the *dura*. Cholesteatomatous material was removed from the middle ear and the antrum and the usual radical mastoid operation was completed. As the bone disease did not lead to the lateral sinus, it was not exposed at the operation. On the following day, July 27, the temperature was 37.0° C. (98.6° F.) and the pulse rate was 100 in the minute. There were no more rigors.

On July 28, 1926, the temperature rose to 37.5° C. (99.6° F.) in the morning and the dressing was changed. It was found to be very foul. This resulted in a fall of temperature to 36.9° C. (98.4° F.), but only for a short period. Blood culture revealed the presence of *Staphylococcus albus*. As a result of a rise in temperature a second operation was undertaken on July 30. Under ether anaesthesia the wound was opened up and it was found that the bone over the lateral sinus was black over an area about one millimetre in diameter. The sinus canal was opened up and was found to be full of pus. The opening was extended until it was five millimetres in diameter and it was seen that the sinus was quite collapsed and

¹The patient described herein was shown at a meeting of the New South Wales Branch of the British Medical Association on September 9, 1926.