

mirror in the morning. She had been subjected to a great shock the previous evening. Usually the onset of the disease is gradual, so that there are really two types, the acute and chronic. The acute cases may run their whole course in a few months. The initial symptom may be any one of the four great characteristics, but palpitation is most often the first departure from health. The increased action of the heart is at first paroxysmal, with intermissions during which the rate is normal; but the intervals shorten until the heart-beat is always above normal, with paroxysms during which marked acceleration takes place. When the acceleration attains its maximum, the ordinary rate is from 90 to 120, but during the exacerbations 160, even 200, may be reached. A soft-blowing murmur is usually audible at the base, and propagated along the great vessels, and a stronger, whirring, blowing murmur is to be heard over the carotids and the thyroid; an epigastric and sometimes hepatic pulsation may be detected. The vessels of the neck and of the thyroid may be felt pulsating strongly, the thyroid almost as an aneurism. The gland enlarges, one lobe—the right in the author's experience (six cases)—twice as often as the left; but ultimately the whole of the organ, in several months usually, after the increased pulsations have begun. In very rare cases no enlargement of the thyroid has occurred. Sometimes the goitre is the first symptom observed. It is elastic, rather soft, and has a distinct thrill like that of an aneurism. It never attains a very great size, reaches its maximum in a few days or weeks, and fluctuates greatly in its dimensions. During the exacerbations in the action of the heart it enlarges, and subsides correspondingly after the attack is over. After a time it becomes firmer, and remains uniform in size. This change is due to the fact that the variations in the volume of the gland are produced by the varying caliber of the vessels, and, when hyperplasia of the gland-elements occurs, the fluctuations in size are no longer possible. Very great changes in the thyroid may take place, due entirely to accidental causes. Thus it enlarges in pregnancy, and it may take on cystic and calcareous degeneration. Exophthalmus may be the first symptom, as in one of the author's cases, but usually this comes on after the goitre. It may begin in one eye, but it is very rarely confined to one, and usually one eye protrudes more than the other. It may not occur at all in a case otherwise well marked, but this is unusual. The degree of protrusion varies from a slight, staring expression to the actual dislocation of the eye on the cheek, and it increases during the paroxysms of active palpitation, and diminishes in the interval. A very important diagnostic point is the incoördination in the movements of the upper eyelid and of the ocular globe. If a patient be told to look at her feet, the upper lid, it will be seen, does not follow the movement of the globe. As this does not obtain in the exophthalmus from any other cause, and as it may be present early in the history of the case, it may be very important. The nutrition of the

cornea may suffer, and conjunctivitis is an ordinary complication. More or less fever occurs during the course of this disease, and a very considerable subjective sense of heat is felt. The rise of temperature is from one to three degrees of Fahrenheit, and a considerable increase of sweat is observed. Pigment deposits and pityriasis versicolor have been observed by the author in some cases, and other trophic affections of the skin have been reported by Bulkley, of New York. Changes in the disposition are constantly observed. The subjects of this disease are nervous, apprehensive, irritable, and lachrymose. Vertigo, wakefulness, tremors, headache, impaired memory and power of application are often experienced. The appetite is usually poor, digestion feeble, vomiting readily occurs, and a more or less rapid decline in flesh and strength takes place. A marked degree of pallor is usually observed. The blood is anæmic, and amenorrhœa is present in most cases.

Course, Duration, and Termination.—Acute cases going through a full development and decline in a few months are very exceptional. It is an essentially chronic malady, and years are occupied in its varying phases. Recovery may ensue within six months, but usually it is not complete, and the symptoms develop again. The most important lesions occurring are dilatation of the cavities of the heart, and death as the ultimate result of the disturbances in the circulation. Tuberculosis is apt to supervene, and some cases are carried off by intercurrent inflammatory affections. A favorable termination may be looked for when the general health is good, the thyroid unchanged, except by simple hyperplasia, and the heart is sound.

Treatment.—The usual arterial sedatives possess but small value in the treatment of this disease. Good results have been obtained from belladonna and ergot. They should be administered for several months, and in full doses. The anæmia, which is so pronounced a symptom, requires iron. Traube achieved great success by a combination of quinine and iron. The author has had good effects from quinine, belladonna, and ergotin, in combination. Galvanization of the cervical sympathetic and the pneumogastric, by placing the anode under the ear and the cathode at the epigastrium, the author has found to be of the highest efficiency. While the current is passing, the action of the heart becomes less tumultuous, the protrusion of the eyes diminishes, and the thyroid shrinks somewhat. Besides the stable application just indicated, labile applications should be made over the thyroid, and a weaker current should be applied to the eyes. While the galvanic applications are making, the remedies suggested may be used internally.

MYXŒDEMA.

Definition.—The term *myxœdema* is compounded of two Greek words—*μύξα*, *mucus*, and *οἶδημα*, *a swelling*—and is applied to a progressive disease, characterized by the occurrence of an apparent œdema,

produced by the deposit in the textures of a mucoid substance, and by changes in the mental condition. The first account of it was given by Sir William Gull,* in a paper with the following title: "On a Cretinoid State, supervening after Adult Life in Women." The term *myxœdema* was proposed by Dr. William M. Ord,† who also gave the first correct, although by no means complete, account of the apparent œdema.

Causes.—The disease was at first supposed to occur in women only, and at the middle period of life, or about the climacteric. Dr. Morvan,‡ who has made a collection of fifteen unpublished cases, reports one case as occurring in a man; Dr. Andrew Clark, of London, has met with several cases in men; and the author has now a perfectly well-marked case in a man of forty-two. The original statements in regard to the age must also be modified. A case has recently been observed in a girl of eleven, and in Morvan's collection the youngest was twenty-two. The conditions producing the disease are not well understood. Alcoholism, syphilis, metallic poisoning, have not been concerned in the cases thus far reported. Nine out of fourteen occurred in women at the climacteric period. Prolonged lactation has appeared to have a causative influence in a few cases, domestic worry has been alleged in others, and living in damp, unhealthy habitations has apparently produced the disease in a few instances.

Pathological Anatomy.—The essential condition of *myxœdema* is an overgrowth of the connective tissue, associated with a peculiar form of degeneration. The cement substance, containing more or less mucin in the normal state, is in this malady enormously increased; the fibrillæ undergo extensive hyperplasia and hypertrophic thickening, and the connective-tissue corpuscles multiply wherever there are connective-tissue elements—in the skin, mucous membranes, arterial tunics, glands, and nervous matter—there this peculiar change will be found to have taken place. The thyroid gland atrophies, so that its proper elements finally disappear, it may be, entirely. The overgrowth of the connective tissue causes an atrophic change in all the tissues encroached on, and in this fact we have an explanation of the various symptomatic derangements.

Symptoms.—The physiognomy of the subjects affected by *myxœdema* is very striking. The face is puffy, pallid, and earthy in hue; the lower eyelids are especially swollen by protuberant bladders, semi-transparent and œdematous-looking, so like that state in which they are in advanced renal disease that the first impression is the case is one of albuminuria; the lips are swollen, the *alæ nasi* thickened and

* "Transactions of the Clinical Society of London," vol. vii, p. 180.

† "On Myxœdema, a Term proposed to be applied to an Essential Condition in the 'Cretinoid' Affection occasionally observed in Middle-aged Women."—"Medico-Chirurgical Transactions," vol. lxi, p. 57.

‡ "Gazette Hebdomadaire," August and September, 1881.

protuberant, and the cheeks have a pinkish flush, terminating abruptly just below the orbit. There is no pitting of this apparently œdematous face; the skin has a rather doughy feel, is thick, resistant, and at the same time has a certain elasticity. The skin is generally dry, rough, and scaly, having a somewhat translucent aspect, and is without perspiration. The hands assume a peculiar shape, become square or "spade-like," as entitled by Gull, and the fingers are blunted, short, and somewhat clubbed.

The thyroid gland, in sharp contradistinction from the condition in cretins, is either much smaller than normal, or has entirely disappeared; but the connective tissue of the subclavian triangle is, on the other hand, tumefied and more or less elastic.

As the changes in the connective tissue include the neuroglia, it is not surprising that nervous derangements accompany the other symptoms. The expression of the subjects of this disease is heavy, stupid, and somewhat sad; the speech is slow and hesitating, if not incorrect; the voice monotonous, and the manner that of a person having an inactive, if not feeble, mind. The memory is impaired, the judgment uncertain, and the mental operations in general below the usual capacity. This depression in the mental corresponds to the enfeebled state of the motor and sensory functions. The muscular movements are slowly executed, more or less uncertain, without being actually incoordinate, and hence the handwriting, as well as the gait, become irregular, or awkward, without being otherwise perverted. There is a certain stiffness and clumsiness of the walk, without there being any actual loss of power, and more time is consumed in executing given movements than was usual in health. The same slowness and clumsiness are observable in all the mental operations. The response to a question is slow, partly in consequence of the tardy receptivity of the impression from without, and partly in consequence of the sluggish movements of the ideational centers.

The respiration is slow, the action of the heart rather depressed and comparatively feeble. The temperature of the body is habitually from a half to one degree below normal, and a subjective sense of chilliness is nearly constant. A feeling of fatigue is nearly always present, and exertion increases it. Active movements soon exhaust the strength, and breathlessness follows on moderate exertion. The nutrition of the body is poor, the appetite feeble, and the digestion languid. A peculiar and very persistent taste—bitter, sweet, or mawkish—is a frequent symptom. The hair has a dry and unhealthy look, and is apt to fall out to a less or greater extent, becoming very scanty at last. The nails are brittle, curved, and irregular in growth, and the teeth decay early. The skin being without its natural secretion, the kidneys are not opposed in function, and hence the amount of urine is increased. As the functions in general are sluggish, this increase of urinary water must be connected with the lessened activity of the

sudoriparous glands. The change in the condition of the urine, at an early stage of the disease, consists entirely in the increased excretion of water, there being neither albumen nor sugar present. With the further progress of the mucoid changes in the kidney, and the encroachment of the connective tissue on the Malpighian tufts and tubules, the urine becomes albuminous.

The uterine functions do not appear to be affected by the progress of the disease. If the malady appears at the climacteric period, the disturbances belonging to this period are not necessarily related to the development of this affection.

Course, Duration, and Termination.—Myxœdema pursues a progressive course, and has apparently been little affected by remedies. It develops slowly, the appearance of œdema being secondary to the anæmia. As it develops there is a constantly increasing weakness. The mind, at first torpid, becomes a prey to hallucinations. The temper, at first amiable and slow to anger, becomes irritable. At or near the close of the malady stupor comes on, and the end may occur in coma. As the changes progress in the various organs concerned in assimilation, the nutrition fails, the muscular force is quickly expended, fixed attitudes are maintained with difficulty, and all exertion is finally accomplished with great difficulty. The blood becoming watery, and the urine albuminous, a true œdema finally comes on. The whole duration of an uncomplicated case is about six years. Intercurrent diseases may end life meanwhile. Death may occur from exhaustion, by uræmic poisoning, or by cerebral coma.

The prognosis, from our present stand-point, must be regarded as unfavorable. Nevertheless, increasing experience justifies the expression of some confidence in the good effects of remedies now utilized in the treatment.

Therapy.—Recognizable causes—as child-bearing, lactation, the affections incident to the climacteric period, bad hygiene, depressing moral emotions—should, as far as possible, be removed.

Remedies belonging to the group of nervous tonics—as arsenic, iron, massage, faradism, and a generous diet—have in many cases done great good, and in a few have effected cures. Pilocarpus and warm baths have been very useful in some instances, the effect of both being to promote the action of the sudoriparous glands. Ord reports that in three cases the disease almost wholly disappeared under the use of pilocarpus—ten to sixty drops of the fluid extract being given four times a day.

The author believes that the method of treatment known as central galvanization will prove to be an important aid to other measures. In a case now under observation, great improvement has followed the use of extract of ergot and arseniate of iron—two grains of the former, and one tenth of a grain of the latter, three times a day.

GENERAL OR CONSTITUTIONAL DISEASES.

ERUPTIVE FEVERS.

VARIOLA.

Definition.—*Variola* is an eruptive disease characterized by the presence of pustules, which make their appearance at the end of the third exacerbation of the initial fever, when the temperature declines, but this period of diminished fever or of apyrexia is followed by a secondary fever, or fever of maturation. *Small-pox*, or *pock*, is the name in common use, which was formerly employed in contradistinction to the *big pock*, or *syphilis*—the word “pock” meaning *pustule*.

Causes.—Small-pox prevails under all conditions of soil and climate, its distribution at the present time being regulated by the degree of protection afforded by vaccination.* It occurs at all ages, and even the *fœtus in utero* is attacked, and it may be so early as the fourth or fifth month of utero-gestation. Both sexes appear to be equally susceptible. Race exercises an influence which is quite decided—the dark races, negroes especially, possess a peculiar liability. During the actual existence of typhoid fever, scarlet fever, and measles, there is an immunity against the small-pox poison, and the susceptibility of individuals varies at different times. As a rule, those who have been attacked once possess complete protection against future seizures, but there are numerous exceptions. The author has met with examples of small-pox occurring twice and three times in the same individuals, and notwithstanding vaccination. The susceptibility to a new attack may be acquired in a few months, but usually not until many years have elapsed. Mild attacks are apparently less protective than severe ones against future recurrence of the disease. Small-pox is spread by a peculiar virus whose nature is unknown. It is true, minute organisms on which the toxic activity is supposed to depend have been found in vaccinia, and also in the pustules of variola, but their position, as

* “*Traité de Climatologie Médicale*,” *op. cit.*, vol. iv, p. 370.