the weight of the body. Kocher, König, and several other authors consider coxa vara mainly in the light of an occupation disease in the same sense and due to similar causes as genu valgum and flat-foot. Kocher has seen it most frequently in young males whose occupation necessitated prolonged standing position with legs abducted, as in the case with cheese makers and some agricultural pursuits. There are, however many cases on record in which no such direct static cause could be made responsible for the deformity. Jaboulay has gone so far in comparing coxa vara with flat-foot as to call it simply "*hanche bot*," and insists that it may be either of congenital origin or acquired-static form. He called attention to this affection of the neck of the femur as early as 1890.

Sprengel reported two cases in 1898, in whom resection of the hip joint was made, and both specimens showed a loosening of the head of the femur in the epiphyseal line, the result of a slight trauma. The displacement of the head and the subsequent union in malposition gave rise to the characteristic deformity, and he is therefore inclined to attribute to trauma the most important etiologic role. A number of similar cases have been reported since, and not a few surgeons are under the belief that trauma is the most important element in the causation of this disease. Charpentier and Kirmisson claim that coxa vara is nothing more nor less than a form of arthritis deformans coxæ.

Hoffa recognizes different causes which, may affect the resisting power of the neck of the femur, which when so affected yields under the weight of the body, and results in diminution of its angle and sometimes in torsion; the former are the predisposing, the static influence the exciting, cause.

PATHOLOGY.

The gross pathology of coxa vara is well understood

and consists in a bending downward of the neck of the femur until it reaches a horizontal line, combined in most cases with a posterior curve, and in rare instances with an anterior curve, these secondary curves causing outward or inward rotation of the axis of the femur. The textural changes are limited to the neck of the femur, the acetabulum and the soft structures of the hip joint remain intact throughout the entire course of the disease. There is no effusion in the affected joint, and no tissue changes in or around the joint indicative of inflammation. The general and local symptoms exclude the existence of any kind of infection and the bone lesion, whatever it may be, is of a degenerative and not of an inflammatoy type. Under the weight of the body, the softened neck of the femur bends downward, and muscular action and ligamentous traction are responsible for the torsion, which varies greatly in kind and degree. The primary bone affection appears to be of a self-limited character, as a spontaneons recovery is the rule. The duration of the active stage may terminate in a few months, and it may be protracted for years. Very little is known regarding the minute morbid anatomy of the primary bone affection which precedes and accompanies the deformation of the femoral neck. As the disease is a self-limited one, few, if any, postmortem examinations have been made so far.

The study of the histology of the bone lesion has been restricted to the examination of specimens obtained by resection (Kocher 1. Hoffa 2. Müller, Nasse, Maydl). Frazier gives an account of 16 such specimens from different sources, in which, on examination, three presented rachitic changes, six practically normal bone structure, two arthritis deformans, and the remaining specimens juvenile osteomalacia. It appears that in the cases collected by the same author and comprising Hofmeister' s table, only in 12.5 per cent, could the disease be

associated with rachitis, and only in 10 per cent, were genu valgum or pes planum, one or both, coexisting affections.

Haedke made a histologic examination of a specimen of coxa vara obtained by resection from a patient seventeen years old. He found a condition similar to rachitis both macroscopically and microscopically. He came to the conclusion that coxa vara may develop at the age of puberty consequent on the so-called late rachitis, although the "juvenile osteomalacia" of Kocher is probably the explanation of the greater number of cases. In Lauenstein's case, there were indications of marked rachitic deformities in many of the long bones. Osteomalacia is a disease that effects, with few exceptions, child-bearing women; rachitis, on the other hand, is a much more common disease and affects children of both sexes alike, consequently it is much more reasonable to assume that the softening of the bone is more likely to be caused by a late localized rachitic process than by osteomalacia. Two other explanations deserve consideration.

As coxa vara is largely, if not exclusively, a disease of the bone-growing period, we might suspect, from a histologic standpoint, either the existence of imperfect ossification caused by a defect in the number or power of histogenesis of the osteoblasts, or possibly an excess of osteoblasts. Again, as the disease is clinically characterized during the acute stage by neuralgic lancinating pains, it is possible that the defective resisting power of the neck of the femur and the osteoporosis might be the consequence of a trophoneurotic affection. In eliminating the affections of the hip joint which clinically mimic very closely coxa vara *vera*, it is very evident that much has to be accomplished in the future to clear up the true etiology, and correct pathology of this strange disease.

SYMPTOMS.

The first symptom complained of by the coxa vara patients is a pain in the hip joint which usually radiates from the joint along the anterior and inner aspects of the thigh as far as the knee. In some cases the function of the joint is seriously impaired almost from the beginning, more especially in the more acute form of the disease; in other instances it is only slightly affected. In severe cases the patients are sufficiently ill to be confined to bed, but ordinarily they are well enough to be about, although quite lame. Temperature and other constitutional disturbances, as well as tenderness about the affected joint, are absent. Patients thus affected are usually under the belief that they are suffering from rheumatism, and when they consult a physician during the early stage of the disease, a diagnosis either of rheumatism or of neuralgia is usually made and treatment directed accordingly. In the course of a few weeks or months the acute symptoms subside, and a decided improvement is noticeable, so much so that the patient resumes his occupation with or without stiffness of the joint. The general health of the patient is not deteriorated to any extent by the disease. Examination of a patient the subject of well-advanced coxa vara reveals apparent and real shortening of the affected limb, the former due to a faulty position of the pelvis, the latter corresponding with the diminution of the degree of obliquity of the femoral neck caused by its downward bending. The normal angle of the femoral neck in the adult, as determined by Mikulicz, is from 125 degrees to 126 degrees, and according to Lauenstein from 126 degrees to 129 degrees. In far-advanced cases of coxa vara the angle is often reduced to 60 degrees. The real shortening varies from an inch to an inch and a half. The affected limb will be found adducted, and in the majority of cases rotated outward. The adduction of

the limb is caused by the diminution of the angle of the neck of the femur and the outward rotation by the posterior secondary flexion or torsion of the neck. The downward bending of the neck of the femur is the most conspicuous anatomic feature of the disease, being invariably present to a greater or lesser degree. The posterior curve or torsion is less constantly present, and varies more in degree. In exceptional cases, the neck of the femur bends in the opposite, anterior direction, in which event the femur is rotated inward instead of outward. Such cases have been described and reported by Zehnder, Ghilini, Nasse and Hofmeister. The trochanter on the affected side is abnormally prominent, displaced backward and above the Roser–Nélaton line to the extent corresponding with the degrees of actual shortening. The gluteal region is flattened, the gluteal fold lowered, and a deep groove will be found between the trochanter and the gluteal muscles. Ogston, who operated on five cases of coxa vara in young children, the oldest only fourteen years, claims that muscular atrophy is absent, and that the gluteal fold is not affected. In grave cases, the base of Scarpa's triangle is prominent, and a hard swelling can be felt corresponding with the convexity of the posterior curve of the neck. If inward rotation should be present, no such prominence can be felt but instead of it, probably, a shallow depression corresponding with the concavity of the anterior curve. Aside from the mechanical obstacles due to the distortion of the neck of the femur, joint motion is free and painless. Abduction and inward rotation are the two movements most interfered with by the deformed neck. Unilateral coxa vara leads to static scoliosis, and, if the disease involves both hip joints, a lordosis develops, as in cases of double congenital dislocation of the hip joint, and the patient assumes the same waddling gait. Hands and feet are frequently livid, a condition

Fig. 3.—Destructive process involving neck of femur.

often observed by Mikulicz in cases of genu valgum in the adult.

DIAGNOSIS.

If an adolescent consults a physician complaining of lameness, pain in the hip radiating in the direction of the knee joint, and on examination the femur is found adducted and rotated outward, the suspicion of coxa vara is well founded, as a similar position of the limb is only observed in fracture of the neck of the femur. If such abnormalities in the position of the limb in young subjects take place in a comparatively short time, coxa vara must be suspected, and a most thorough examination should be made with the patient in both the standing and recumbent positions. If this is done mistakes in diagnosis will be avoided, more especially in differentiating between this disease and the early stages of tubercular coxitis. Coxa vara never gives rise to abscess formation, while this is of frequent occurence in tubercular coxitis. The onset of coxa vara is more abrupt and acute than what is observed in the majority of cases of tuberculosis of the hip joint. It is a self-limited disease, and sooner or later a spontaneous cessation of the acute symptoms may be confidently expected, while the opposite clinical tendencies characterize tubercular coxitis. Tuberculosis of the hip joint, like tubercular processes in other parts and organs of the body, is generally attended at least by a slight rise in the evening temperature, while the temperature in coxa vara remains normal. Tubercular coxitis in the great majority of cases is a disease of childhood, and begins in the larger proportion of instances as a primary osteal affection in the proximal end of the femur. Its onset is insidious. The pain is referred to the inflamed joint, and radiating in the course of the obturator nerve to the inner condyle of the femur. During the early stage of the disease

the thigh is slightly flexed, abducted and rotated outward. Noctunal muscular twitching is almost a constant symptom; this is something which is never found in coxa vara. In tubercular coxitis, muscular rigidity fixes the joint at an early stage and all movements are productive of pain, and light blows against the condyles invariably aggravate the pain. Tenderness, such a marked clinical feature in tubercular and other inflammatory affections of the hip joint, is never found in coxa vara. Shortening and outward rotation of the limb belong to the latter stages of tubercular coxitis, while in coxa vara they may even precede the painful or acute stage of the disease, and the shortening is always one of its early manifestations combined usually with outward, and, in exceptional cases, with inward rotation of the limb. As a final diagnostic test in doubtful cases, the employment of the Roentgen ray will enable us to differentiate between the two affections (Fig. 3). In coxa vara, the downward bending of the femoral neck is al most characteristic, while in tubercular coxitis the *x*–ray picture will show the existence of a destructive process involving the proximal end of the femur, frequently complicated by coexisting or consecutive disease of the acetabulum.

Bilateral coxa vara is of more frequent occurrence than bilateral tuberculosis in the relative proportion with which these two diseases are encountered in practice. Muscular atrophy is more marked in tubercular coxitis than in coxa vara. The differential diagnosis between coxa vara and arthritis deformans, called senile coxitis, where it affects the hip joint, presents fewer difficulties. Coxitis senilis is a disease of advanced life.

Old age is a relative term in this as well as in many other connections. Some men are old at forty years,

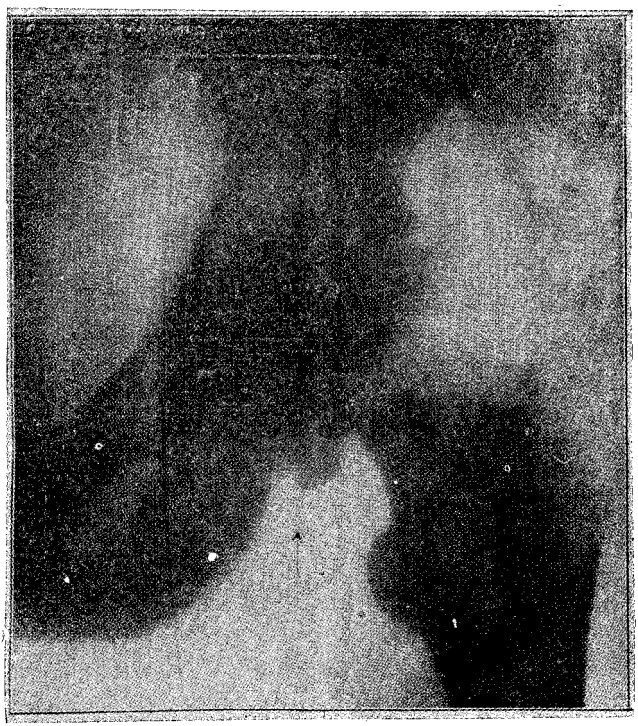


Fig. 4.—Inflammatory deposits involving femoral neck, especially its base.

others remain young in body and mind at the age of the Psalmist's limit of life. Cases of senile coxitis are met with in persons less than forty–five years of age. It may be claimed that the case which I report in this paper is one that should be classed under the head of senile coxitis. There is only one condition in the radiographic illustration of this case that might excite doubt, and that is the elongation and flattening of the head of the femur. This condition, however, is not incompatible with my diagnosis as we may safely assume that the same causes which softened the neck of the femur sufficiently to yield to the weight of the body may have extended to the head, rendering it liable to undergo alterations in shape under the influence of the same mechanical or static causes. On the other hand, this picture is entirely negative concerning the constant pathologic conditions found in senile coxitis, viz, neoplastic inflammatory deposits involving the femoral neck, especially its base, the acetabulum in the form of a new bony deposit, which finally result in a complete ankylosis (Fig. 4).

In senile coxitis the angle of the neck of the femur is not diminished. Arthritis deformans is not infrequently a polyarticular disease, while coxa vara is an affection which is only met with in the hip joint. In senile coxitis, the head of the femur becomes occasionally elongated, but during the later stages the upper surface is deprived of its cartilaginous covering, and the exposed underlying bone becomes hardened and is polished by the limited movements of the joint. In the case reported, such changes have not taken place, most of the movements of the joint have been rather increased than otherwise since the cessation of the acute symptoms. There is no pain, no cracking or roughness elicited by joint motion as in well advanced cases of senile coxitis. The shortening of the limb in senile coxitis is not caused by bending downward of the neck of the femur, but by

loss of tissue of the head of the femur and the upper segment of the acetabulum.

It should not be difficult to differentiate between coxa vara and traumatic or pathologic epiphyseolysis. These are injuries and affections recognizable by a careful study of the clinical history and by a thorough examination. The only exception I know of that might lead to a wrong diagnosis is a fracture of the neck of the femur without complete functional loss of the limb, an instance of which came under my observation in the surgical clinic of Rush Medical College last winter.

Patient.—A tall, spare man, aged 65, suffered a fracture of the neck of the femur eight months before he sought the service of my clinic.

History.—The fracture was the result of a fall on the great trochanter and the injury was diagnosticated as a contusion. After the first day, the patient left his bed, and with the aid of crutches, used only for several weeks, has been on his feet ever since. He walks now with a decided limp, but without the aid of mechanical support.

Examination.—I found all the indications of an impacted intracapsular fracture of the neck of the femur which had united by bony union, an inch and a half of shortening, and outward rotation of the limb. The accompanying radiograph corroborates the correctness of the clinical diagnosis. Bony union of the impacted fracture is perfect (Fig. 5). The neck of the femur is shortened, but there is no diminution of its angle.

The Roentgen ray should be relied on in doubtful cases in confirming or correcting the clinical diagnosis. The Roentgen photogram should be taken from behind with the patient in the ventral position, and the tube 24 inches above the surface of the body. (Hofmeister). In applying this, the most reliable and important diagnostic test, Kirmisson had to change his diagnosis four times in 7 cases, while in Hofmeister's 15 cases it confirmed the clinical diagnosis in all but one.

PROGNOSIS.

Coxa vara never becomes a direct source of danger to life. Left to itself and under the influence of conser

Fig. 5.—Perfect bony union of impacted fracture of the neck of the femur.

vative expectant treatment, it pursues the course of self-limited diseases and sooner or later ends in spontaneous recovery. The impairment of the functional result depends on the degree of deformation of the femoral neck. Some cases terminate in almost complete restoration of joint function, in others the extent of bending and torsion of the neck of the femur is such that permanent lameness and greaimpairment of joint function are the inevitable results. After cessation of the acute symptoms, the use of the limb often improves quite rapidly, just as after a fracture with vicious union, owing to the architectural changes for the better in the deformed neck which nature effects.

Hofmeister gives the ultimate functional resuls in 32 cases. All the patients recovered sufficiently to return to thei rformeroccupations, which certainly reminds us not to resort to operative measures prematurely, as undoubtedly has been done in some cases in the past. As in inflamatory flat-foot, the pain gradually disappears, after which a process of partial or complete restoration of function is intiated.

TREATMENT.

The general treatment in coxa vara is unimportant, if not useless. The subjects of this disease usually enjoy fair, if not perfect, health. It is a local affection, limited, so far as we know, to the neck of the femur, and the exact nature of which so far is unknown. As a number of weighty authorities are of the opinion that this local affection is a late manifestation of rachitis, the internal administration of minute doses of phosphorus would be theoretically indicated. I made use of this anti-rachitic drug in two of my cases with what I believed to have been a good effect, but they might have been comparatively mild cases, and the speedy and satisfactory recovery might have taken place without such medi-

cation. In patients infected with hereditary or acquired syphilis, the internal use of potassic iodide should not be neglected. The local treatment must have for its objects the relief of pain and the limitation, as far as posible, of the bending and torsion of the neck of the femur. Both of these indications are met by securing for the affected joint absolute rest. Rest in bed, combined with extension by weight and pulley, should be enforced as soon as a correct diagnosis is made. Bauer reports three cases from the Serafim Hospital, Stockholm; the patients, aged respectively 17, 17 and 16, were cured by baths and massage, in one case combined with extension continued for four weeks. Rest in the dorsal recumbent position combined with extension continued for four weeks. Rest in the dorsal recumbent position combined with extension answers the indications more perfectly than any orthopedic appliances, and should be continued until the acute symptoms have disappeared. After the pain has ceased, the patient should make use of crutches for a number of weeks, and during this time the sole of the shoe on the opposite side should be raised at least an inch in order to secure auto-extension of the limb on the affected side. In the vast majority of cases, this simple expectant treatment will suffice in shortening the acute stage, and in preventing a maximum degree of deformity.

Until the active symptoms are fully under control, operative treatment is absolutely contraindicated. After the acute stage has subsided, baths, massage and electricity will be found useful in developing the atrophied muscles, and in increasing the range of joint motion. At this stage forced motion under narcosis may improve the functional result. The great improvement in the use of the limb, which is so often observed to take place spontaneously, is probably the result of a gradual modeling of the deformed neck into a more

normal shape. The surgeon should postpone all operative measures until he can satisfy himself that conservative treatment and nature's efforts have fallen short in restoring the usefulness of the limb. When this has been shown to be the case, various operative procedures suggest themselves. No one operation can meet the mechanical obstacles in different cases. Before any operation is planned, Roentgen photograms should be taken, showing the anterior and posterior aspects of the joint, as the conditions thus revealed will aid the surgeon in the selection of the operation suited to the case. Zehnder and Vulpius made use of section of the adductor muscles combined with *brisement forcé*, a method of treatment which at best has but a limited range of application. Kraske and Budinger advised the excision of a wedge-shaped piece of bone in the anterior convex side of the neck (*Keilosteotomie*) for the purpose of correcting the extreme outward rotation of the limb. Koenig condemns this operation, unless it can be made extracapsular, which is not often the case. Several disastrous results have followed this operation. Linear straight subtrochanteric osteotomy (Hofmeister) and oblique subtrochanteric osteotomy (Hoffa) have been practiced with success in a number of cases. Watson-Cheyne reports two cases, children six and a half and three years old, in whom he made a subtrochanteric osteotomy to correct the outward rotation. In one case Kocher made a subtrochanteric resection with a satisfactory result. De Forest Willard obtained a good result in an aggragated case by making a transverse intertrochanteric linear osteotomy. In very grave cases of deformity following this disease resection of the joint is favored by Hoffa and by Sprengel. In one of Hoffa's cases, the shortening of the limb was reduced from seven to three inches by this operation.

THE CARE AND CURE OF EPILEPSY

BY CHARLES H. HUGHES, M. D.

DEAN OF THE MEDICAL FACULTY AND PROFESSOR OF NEUROLOGY AND PSYCHIATRY BARNES UNIVERSITY.—HON. MEMBER BRITISH MEDICO-PSYCHOLOGICAL ASSOCIATION.—ACTIVE MEMBER AMERICAN MEDICAL ASSOCIATION.—MEMBER AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION, ETC., ETC.—ST. LOUIS. MISSOURI.

Since my earlier contributions to this subject in the early eighties and before, in presenting the value of persistent cephalic galvanizations in reestablishing cerebral vaso-motor center tone and restoring arterial vascular control and removing cerebral adrentitia, after the manner of Althaus and the experimental suggestions of Laborde, Consean, Duval and others, a remarkable advance is being made in professional efficiency confidence and results in the direction of the care and cure of epilepsia in its major as well as minor forms of display.

I have before me as I make this observation, the announcement of the American National Association for the Study of epileptics, in which, appear besides the announcement of the presidential address, papers on "The States relation to the Epileptic", "The prognosis of epilepsy, the influence of Puberty and Adolescence in its Etiology", "Certain Aspects of Differential Diagnosis between Hysteria and Epilepsy", "Observations on its Treatment". "The Spectrum Analysis of the Blood in Epilepsy", "Syphilitic Epilepsy", "Observations on Blood Pressure in the Epileptic", "Lantern Slide Illustrations of Cases, and of the Massachusetts Hospital for Epileptics", "Ten Cases on Special Treatment". "Salt Poor Diet", 4 reflexes in Epilepsy and the Status Epilepticus", "Lumbar Puncture in Status Epilepticus", "Myoclonus Epilepsy and the Exhaustion Paralysis of Epilepsy", "Private Colonies for Epileptics", "Duties of the State with Reference to Epileptics", "Dietary in Epilepsy", "Certain Aspects of the Differential Diagnosis between Hysteria and Epilepsy".

All of these contributions being by eminent men of clinical repute in the study of this hitherto considered, intractable malady, but now, in the light of new discovery and modern therapeutic resource no longer justifiably deemed incurable.

The prognosis of either grand mal or petit mal need no longer deemed hopeless, neither in their idiopathic or traumatic forms if the cause be removable, though these, without surgical relief, removing sources of pressure or the thorough reconstruction of the cerebro-psychic and psycho-motor and vasso-motor centers of the brain are obviously hopeless of cure. Yet they may be cured, as phases of the Jacksonian malady are.

The captions just cited reveal the many view points of the care and treatment of epilepsy and show the

many aspects in which it must be considered, if we would acquire an intelligent conception of its management and cure. To these many important considerations might well be added a consideration of the elimination of vicious entailment as in ancestral alcoholism, syphilis, certain insanities, epilepsia itself and its blended and allied spasmodic neuroses the unstable nerve center envolving environments, in their multiform neuropathic engenderings, as now so well known or as yet to be known to neuropathological research.

The study of larvated epilepsy and of those "strangely hybrid forms of neuropathic disorder" which begin or end in ancestral transmitted or personally acquired epileptoid disorder, the psychic equivalents or alternations of these and of the grand mal forms or hystero epileptoid manifestation, must take on a newer, more extensive and more interesting phaze as we come to a better and wider conprehension of the protein causes and conditions of variously appearing neurores.

The causes and conditions of precursive and nocturnal epilepsia of the alternating maniacal and other automatic forms, its singular automatisms and states of double consciousness.

The successful study and management of epilepsy is the thorough study and understanding and treatment of the entire man in all the pathological conditions which influence him or are in any way connected with both his physical and psychical life. "Those important molecular modifcations" which take place in the inner recesses" neurone life, impenetrable as yet to our senses", declaring them insensible motions in sensible symptomatic results, to borrow and modify the physiopathological phraseology of Maudsley of the patient throughout his organism are to be fully considered, in the estimation of the right care and treatment of every epileptic.

If we carefully consider the causation and resultant symptomatic display of epilepsia and epileptoid in its varied forms, we find that although its one physical sign or symptom namely, that of transitorily arrested or suspended psychic function and consciousness is always present, with usually a briefly manifest spasm or more prolonged but always clonic convulsion, a convulsion which in the grand mal form of this malady has been characterized by Mr. Hughlings Jackson as a sudden explosion of nervous energy. But the unconsciousness may be so brief and incomplete; a mere momentary amnesia of time, space, words or surroundings as scarcely to impress the person or those observing him or conversing with him; a minutely transient automatism of thought, act or deed, the individual, in a moment or a few seconds even resuming his thought, occupation, discourse, song or other action of mind or voice or note or pen or limb, like the cases described so well by Hughlings Jackson, Broadbent and others besides myself in the literature of the remarkable morbid manifestations of disordered brain and mind connected with this singular and yet somewhat mysterious desease.

Notwithstanding so high an autority as Mr. Hughlings Jackson has characterized epilepsy as a discharging lesion and notwithstanding the paroxysms of the characteristic Grande Mal give it the appearance of an explosion of acumulated nervous force, it is, in its symptomatic display rather a spasmodic, than and exploxive condition, a similar spasm to that of the molecular system that we see displayed in the grander attacks appearing to also involve the vaso motor controlled arterioles, first in spasm and then in reactionary relaxation and vaso motor center paralysis and arteriole dilation and later the return of normal vaso motor tonicity and arteriole caliber.

In its initial phazes this initial arteriole spasm, due to attend vaso motor center innervation dependent

on inherently post natally acquired failure of normal neurone integrity, with perhaps, the exciting influence of certain, as yet conjecturally but not obsolutely proven toxines determines the epileptic or epileptoid attackand immediately following symptomatic display, whose varying and various manifestations depend many differing factors as they exist in different brains or depend on the locus morbi and initial starting point of the spasm exciting lesion. A cranial depression, an adrentitious deposit, a tumorous location growth, an embolism, thrombus extravasation or depravity and toxicity of blood and inherent neurone aptitude determining the starting point and character of the subsequently following attack.

All these facts and more, are to be considered in estimating the prognosis, the care and the treatment of epilepsia and epileptoid as we should estimate them and all possible pathological conditions in the management and prescriptions of any grave malady of the organism. Tranquilization of the aberrantly acting neurone grouping responsible for the symptoms is to be specially tranquilized by suitable nutrition and chemical and sanguiferous impression. The entire brain should be put under suitable tranquilizing restraint and normally favorable cerebral reconstruction. The entire organization should be scanned and treated so as to conserve the organisms in all of its functions favoring normal tranquility of brain, cerebral reconstruction, the elimination, an interception in the formation of alimentary and haemic toxines.

The metabolisms, generally at fault in epilepsia should be brought back to normal, the alimentary tract and the skin and kidneys kept in constantly well regulated healthy action, sleep should be abundant and timed preferably to the night time. The conscious life, daily, of the epileptic should be mainly displayed

in hours of daylight, his food slould be always mixed chiefly of vegetables and fruits, milk, eggs, butter and sereals, but little meat. His drink should be free from stimulants, especially alcoholics and neither tea nor coffee allowed in the after part of the day, if at all. He should be under constant surveillance from the beginning to the close of his treatment and for a period of not less than from two to five years and he should remain at least from eighteen months to two years without an epileptic display and without treatment before we venture to express a probability of recovery having taken place.

In another communication I have given the following cases (*) as proving the undoubted curability of epilepsy. They are only a small number of my private practice cases, many being yet under observation, though free from recurrance for several years.

An exhaustive experience with the formidable having transformed my earlier life doubt into one of extremely cautious convictions, although I am indebted to the successful result in my first case, forty five years ago 1859 and 1860, for the inspiration of that hopeful endeavour which has later crowned with an encouraging measure of success, a hopefulness wihch I am glad to see has been caught up by others.

In that early experience I had not the great hopefulness of M. Brown-Sequard's great demonstration of the value of the bromides, they not having been so soon familiar to me. But the nitrate of silver, the protoiodide of mercury systematically employed, with a milk, fruit, egg, butter, and vegetable diet and the regular securing of sleep and the steady regulation of all the organic functions, especially two or more actions-morning and

(*) See Alienist and Neurologist.

evening of the bowels and in short the management of the entire man were my reliance. I allowed this patient, at his earnest solicitation, to drink a small quantity of beer, about a glass, with several glasses of milk, several times a day and though he got well and had never had any history of syphilis, I have not since used the beer treatment, the maltines and maltzymes and various pepsines supplanting the necessity for the malted alcoholic.

An essential therapeutic aid in the therapeutics of epilepsy is the imparting of hope of cure to the unfortunate victim of this terrible malady. The depressing consciousness always present with the patient of its uncertain time and place of sudden seizure, the knowledge of his liability to fall, as Caesar did in the market place and forum at Rome, the often pitiable helpless publicity of the paroxysms and even the untimely helpless unconscious attacks, of petit mal, in places and times above all others, where and when the unwilling victim had he the choice, would not for much, have had them, peculiarly effect the mental lives of these unfortunates malades.

To be able in the light of our present knowledge of its varying pathological relations and symptomatic causes in so many cases and our helpful therapeutic resources and clinical experience in the control of this formidable malady if steady long time treatment is persevered in as to lift an oppresive weight from the patient and remove a standing influence from the way of our curative endeavorus. Epilepsy in many of its pathological phazes is not the approbrium medicorum of the past and we need not now, with the light before us of its successful management, repeat the hopeless prognosis of the not very remote past. We may safely tell the patient now that many cases are curable under constant long

continued treatment, faithfully keeping the patient free of his recurring paroxysms by persistent judiciously adapted bromide and other therapeutic suppression, cerebral reconstruction, the daily anticipating and free daily opening of the intestinal tract, systematically and continuosly caring for the completion gastrico-duodenal digestion, the guarding against ptomaine poisoning, the improvement of the metabolic processes and the correction of all visceral conditions that may be going wrong.

The successful treatment of epilepsia and epileptoid means to treatment of the entire patient and here we come back to our point of starting.

The essential conditions of an epileptic or epilep toid seizure appear to consist in involuntary and unconscious atonic vaso-inhibitory states of the vaso motor centers of the optic thalami, medulla, and cord. The peculiar epileptic vaso atonic condition is influenced by many different morbid states of the brain, such as distant cerebral traumatism, gumma or other adrentitia, embolism, aneurism, thrombosis etc, and from peripheral source of neurotic or circulatory disturbance. So that the remedy for the local pathological causation should obviously vary much more than the therapeutics of the paroxysmal or lost consciousness and convulsive expression, although the final remedy for the one when the pathological cause is organic is the best remedy for the other condition.

The bubonic plague in the port of Mazatlan. State of Sinaloa Republic of Mexico.

PAPER READ BEFORE THE AMERICAN PUBLIC HEALTH ASSOCIATION IN THE MEETING HELD IN HAVANA DURING THE SECOND WEEK OF JANUARY, 1905.

BY DOCTOR EDUARDO LIECAGA.

PRESIDENT OF THE SUPREME BOARD OF HEALTH OF MEXICO.

The campaign which the Mexican Government undertook against Yellow Fever in the last six months of 1903 and my official duties on the Board of Health, were the obstacles that prevented my attending the 31st meeting of this Association which was held in Washington, and it is for that reason that I now come to present a report on the epidemic of Bubonic Plague which was developed in Mazatlan from the end of December, 1902, to May, 1903.

I have thought it necessary to present a report of that epidemic before this Association, even though it

may appear somewhat late, because a society that is intended to study public hygiene in all its branches, cannot allow an epidemic to pass without notice, that might have been of fatal consequences for the Mexican Republic and even for the American Union if it had not been limited to the Port of Mazatlan where it appeared and to some small villages in the neighbourhood of that port. From the point of view of International Sanitary Police, it is of interest to bring this event to mind, because there is no example of an epidemic of Bubonic Plague having been confined by the efforts of the authorities to such a small number of towns an finally extinguished in less than six months.

PROBABLE ORIGIN OF THE EPIDEMIC.

Mazatlan is a port situated on the Pacific coast, at 23° 11' 2'' of North Latitude and 7° 17' 34'' of Longitude West of Mexico. It is situated within the Torrid Zone and its climate is tropical. It has a population of 25,000 inhabitants.

This port is in frequent communication with that of San Francisco, California, in the United States, where for the three previous years the Bubonic Pague has existed in a central quarter of that city, which is called "Chinatown".

Probably fearing the quarantine restrictions that might be imposed on their trade in foreign ports, the authorities of San Francisco, California, had carefully hidden the existence of the disease and were issuing clean bills of health to the ships that sailed from that port.

On the 13th of October, 1902, the steamer "Curacao" reached Mazatlan with a cargo of goods from China which were landed in that port. Seven days afterwards the first case of the disease was observed, but no diagnosis could be made because the plague had

never been seen in the Mexican Republic and its physical symptoms were unknown to the physicians, for which reason it is supposed that the patients were suffering from a rare and malignant form of malaria.

It has been found impossible to discover whether these goods came directly from Chinatown in San Francisco, California, or whether they had been trans-shippped to the "Curacao" from a vessel arriving directly from Asia; but the unquestionable fact is that the ship had sailed from San Francisco and that the cargo contained goods of Chinese origin.

FIRST NOTICE OF THE APPEARANCE OF THE EPIDEMIC.

In the month of December, 1902, the Delegates of the Supreme Board of Health in the Port of Mazatlan, reported by wire that an extraordinary disease had appeared in that city, of hich 19 cases had been observed and 8 had terminated fatally, all during the time that elapsed from the 20th of October to the 13th of December, that the disease was principally characterized by high fever and by the appearance of buboes in the groins, armpit or neck.

The Supreme Board of Health, which is by law charged with the International Sanitary Police in the port, had no knowledge during the first days of the month of December of the facts above mentioned, that the steamer "Curacao" had brought goods of Chinese origin; but bearing in mind the extra-oficial knowledge it already had of the existence of plague in a ward of San Francisco, California; and the fact that the only transmissible disease which is accompanied by high fever and buboes is the Plague, ordered its Delegate to endorse the bills of health with a statement, that a disease existed in the port which was suspected of being Bubonic Plague. At the same time it addressed the local authorities of Mazatlan and the Governor of the State of

Sinaloa, in which the port is situated, urging upon them to take the measures that are provided for under the Sanitary Code for the extinction of any epidemic disease.

In orderly to proceed to the orderly enumeration of these measures, I will take them apart and first relate those that were adopted against the disease in order to stamp it out in the place in which it originally appeared; secondly, those that were intended to prevent its propagation by sea, and thirdly, those that were intended to avoid its transmission by land.

I. MEASURES ADOPTED TO STAMP OUT THE DISEASE IN THE PLACE IN WHICH IT HAD APPEARED.

Orders were sent to the political authorities of Mazatlan to bring before the physicians, heads of families, of workshops, of factories, of schools and colleges, the obligation that is laid upon them under the Sanitary Code, to declare the cases of Plague that might come within their knowledge.

The local authorities at once ordered house to house visits to be made in order to discover the sick people who might have been hidden by their relatives, and in order to carry this measure into practice, the city was divided into wards and the investigation was put under the charge of physicians assisted by 125 men of the Sanitary Police. At the same time and in compliance with the provisions of the Federal Sanitary Code, the isolation of the patient in a Lazaret.

In order to make this isolation entirely effective, the Lazaret on the Island of Belvedere was arranged and a department established there to receive the undoubted cases of Plague, besides another isolated department for persons suspected of having the Plague. Another was dedicated to the convalescents and on the same Island

they established a series of bath houses, a dispensary and a special dwelling house for the hospital attendants and staff employed in the building.

The easy and safe isolation of the patients was secured by placing the Lazaret on an Island. At the same time, seeing that those persons who had been attending the patients before they were transported to the Lazaret, might have received the contagion, an observation camp was established on the heights above the bicycle track, close to the beach and outside of the town. This observation camp consisted of a series of sheds intended to lodge the families of the Plague suffers, who were there lodged and fed and kept inobservation for ten days, and only allowed to leave the camp if found in good health on the expiration of that term. The poor people were on departing supplied with new clothing and a certain amount of money.

As the poor quarters of the port of Mazatlan are greatly crowded with houses, orders were given to dislodge the surplus inhabitants of each house and to furnish them lodging in tents.

Also in compliance with the Sanitary Code, orders were given for the desinfection of the houses that had been occupied by the sick people and of the clothing they had made use of. When the latter were found to be of small value they were burned.

In order to carry out the disinfection service in the different quarters of the city, a solution was employed of bi-chloride of mercury at one per thousand, which was atomized over the roofs, the walls and floors of the dwellings by means of force pumps. When these houses were of slight value, and especially when they could not be disinfected they were destroyed by fire; 375 houses have disappeared in this manner.

As the epidemic had been preceded by a great mortality among the rats and mice, war was declared against

The first step which the Delegate of the Board of Health in the port of Mazatlan was instructed to take, was to endorse the bills of health with the statement that an epidemic disease had appeared there which was suspected of being the Bubonic Plague. This declaration was made, not only to protect our own port but also foreign ports against all risk of the disease being imported from Mazatlan.

The steps that were intended to prevent the spread of the disease by sea can be divided into two groups, (a) those that were taken in the port of departure, and (b) those that were to be observed in the ports of arrival.

(a). A commission of physicians was appointed to issue certificates of health or passports to the persons who came to the port for the purpose of embarking, in this manner preventing any diseased or suspected person from going on board and carrying with him the Plague. This commission was charged with the duty of disinfecting the baggage of the passengers and the goods that were shipped; and the Sanitary Delegate in the port was instructed to carry out the destruction of the rats and mice on board of the ships that were about to sail. These precautions gave a great feeling of security; but in order to still further comply with the provisions of our Maritime Sanitary Regulations and the additions, all the Delegates in the Pacific Ports were again reminded of the Rule I am about to refer to.

(b) The ports along the Pacific Coast are very numerous, and as some of them have no Medical Delegate who is the Sanitary authority charged with the medical inspection of the ships, and the one that has to direct their disinfection, these ports which are of only slight commercial importance, were closed to all direct traffic from Mazatlan, the only ports left open being

those of Guaymas, San Blas, Manzanillo and Acapulco, subject to the legal provisions above mentioned and which can be summarized as follows:

The ships were to lay out in the bay on a special anchorage that was provided for suspected vessels; the Sanitary Delegates would then appoach the side and give orders for the vessel to be detained ten days, including in these, the day on which the vessel left the infected port. The object of this detention was to ascertain that the disease had not developed itself in the person of any passenger or member of the crew. During this period of observation, the clothing in use and the passengers' baggage were disinfected as well as the cargo contained in the hold and the rats and mice were also destroyed, all by means of sulphurous acid which was burned in the proportion of 40 gram per every cubic metre of space in the hold, which was left hermetically sealed for 24 hours. Meanwhile, the decks of the ship were disinfected with a solution of bi-chloride of mercury at one per thousand, or of carbolic acid at five per cent. Only those articles which were to be disinfected on their surface were treated with Formaldehyde vapor. Once all these operations were terminated and before commencing to discharge, the Delegate examined all the goods, package by package, so as to ascertain that the outside coverings did not carry any rats or mice and that they had no holes. If he found any one of them in this condition, it was to be feared that these animals might have got into the interior of the package and in that case they were opened so as to ascertain the truth and the packages placed in such a situation that on issuing the rats would fall into boiling water, from which they would not be extracted except with the aid of tongs. Once taken out they were covered with petroleum to burn them.

If the ships arrived with sick people on board or if

the Plague had developed on board during the ten days of observation, they were sent to the port of Acapulco, where there is a Lazaret properly fitted up to receive persons suffering from the Plague, Cholera or Yellow Fever.

If the final destination of the vessel was not one of the above mentioned ports, on the expiration of the ten days observation and after a proper disinfection, the Delegate issued to such ships a certificate which stated the above facts and with this document they were allowed to enter any port on the Pacific coast.

In order to facilitate the importation of provisions, disinfecting substances and others that might be required, special permits were issued by the Supreme Board of Health to certain vessels for them to carry those goods to Mazatlan but without entering the port. In these cases the vessel laid outside of the port and the Sanitary Delegate went alongside in his boat to receive the goods, without permitting the people from shore to communicate with those of the vessel, and then issued a certificate in which all these facts were setforth so that the vessel could return to her port of departure or any other without being subjected to quarantine.

These measures have been so efficient, that not a single case of Plague was developed on the vessel or carried to any other port during the entire period that the epidemic raged.

III. MEASURES INTENDED TO AVOID THE PROPOGATION OF THE PLAGUE BY LAND.

A most efficacious means for stopping an epidemic is to decrease the number of inhabitants of the town in which it prevails, as in this manner there is a decrease of the element which tends to the propogation of the disease. The public authorities cannot order this except in the case of very small towns; but in the pre-

sent case the residents of Mazatlan began to leave the place and it is estimated that as many as 8,000 people did so. But at the same time, it is indispensable that on abandoning a city, the emigrants should not carry the contagion with them, either in their persons or baggage.

A medical commission was appointed to examine the persons who desired to leave Mazatlan; if they were found in good health, a passport was issued to them which stated their names and surnames, their state of health and place of destination. This commission forwarded similar reports to the authorities of the place to which the emigrants were proceeding and kept a register of them all.

On the roads leaving Mazatlan (it has no railroad communication as yet)for other points in the State of Sinaloa and neighbouring States, and on the most frequented passes, Sanitary Stations were established that consisted of a department for those who arrived with the disease confirmed; another dedicated to the patients who were simply suspected of suffering from the Plague; of a third department in which the convalescents were lodged; of a bathing department; of a disinfectig furnace; of a room dedicated to the fumigation of goods by means of sulphurous acid and lastly of living rooms for the staff.

These Stations were under the direction of a hygienist physician.

Besides this, a second zone of Sanitary Stations was established at a certain distance from the first and the States that adjoined that of Sinaloa also set up Sanitary Stations, of which two were in the territory of Tepic, two in the State of Jalisco. three in that of Durango and one in that of Sonora.

The defenses by land were established as follows:

In the first place, the Medical Commission in Mazatlan made an inspection of all persons who attempted to leave the city. If any of the travellers were found sick before the second day on the journey, they would be detained in the first Sanitary Station; if the disease showed itself between the second and fourth day, they would be detained in the second zone, and if it appeared when the traveller was leaving the State of Sinaloa, he would be detained in the stations of the adjoining States; but if even then the incubation was prolonged and the disease showed itself before the tenth day, the traveller was kept under the vigilance of the authorities of the place to which he arrived, as they were previously warned by the Medical Commission of Mazatlan.

It is estimated that more than 8,000 people left Mazatlan during the first days of the epidemic before all the precautionary measures could be put in force, and it will therefore be understood that many escaped the inspection in Mazatlan and avoided the Sanitary Stations, this explains how some cases appeared in the three divisions I will refer to later on; but so limited was this number that I do not hesitate to say, that the Plague remained concentrated in Mazatlan and that consequently the steps taken to prevent its propogation by land produced the desired result.

PLACES TO WHICH THE EPIDEMIC SPREAD FROM MAZATLAN.

A village of 400 inhabitants called Oso, and situated on the left bank of the River Fuerte was the first to be attacked as follows: A family left Mazatlan on the 24th of January and on the 27th when they reached the village of Elota, a little girl fell sick. In order to avoid passing through the Sanitary Station established in this place, the family fled to Oso, where they arrived seven days after. The little girl died there, but spread the

contagion to her mother and the latter to the grandmother, so that the two also died. As soon as the fact was reported, a physician was sent from Culiacán, capital of the State of Sinaloa, who was able to prove that the patient whom he found still alive was suffering from the Pneumonic form of the Plague. The disease attacked still three persons more; but as the whole of the patients and persons attending them were isolated; their clothes and other articles that might have been infected and the houses in which they had dwelt were destroyed by fire; as all the persons who ran any risk of contagion were vaccinated with Yersin Serum, which was the only one at that time disposable, and as the neighbouring houses were destroyed, the epidemic was finally stamped out in that place.

I would al so note that the village of Oso, which is situated about 170 kilometres from Mazatlan, was the farthest to be reached by the epidemic.

The village of Villa Union, situated 26 kilometres to the south east of Mazatlan, was invaded by the families who emigrated from the port when the epidemic declared itself, and to this fact as well as to the frequent communication it had with the port, we owe the appearance of another focus, where seven persons were attacked, although only one died. As soon as the first case was observed, physicians, disinfecting furnaces, disinfectors, were sent and measures were taken for isolating the sick, the suspected and the convalescents. As in Mazatlan an observation tent was established in which to isolate families of the sick people, the houses inhabited by the patients were destroyed, the rats persecuted and the epidemic was stamped out. Two important factors contributed to this result; of which the first was the establishment of a Sanitary organization similar to that in Mazatlan, and the second the vaccination with the

Besredka vaccine of over 645 persons who were exposed to the danger of taking the disease.

Another village called Siqueros, situated 34 kilometres from Mazatlan and 15 from Villa Union, received the emigrants from the latter village and with them the disease; but all the same resources that were employed against it in Mazatlan and in Villa Union were utilized in this case, and although nine cases were observed with six deaths, the epidemic was also stamped out in that village.

Before terminating my report of the steps that were taken to prevent the propogation of the epidemic by land, I must mention a plan that efficaciously contributed to prevent the emigration of the sick, and which consisted in the organization of a flying brigade of Sanitary Police, accompanied by an ambulance and under the direction of a physician, which travelled along the road and visited the small villages, exercising thus a most efficacious vigilance.

CONFIRMATION OF THE NATURE OF THE DISEASE

As we stated at first, the Supreme Board of Health, the Federal and the State authorities in Sinaloa, laid down the plan of campaign against the Plague, based on the clinical symptoms of the disease; but the scientific conditions demanded that its nature be confirmed by bacteriological proof. For this purpose the Board sent Dr. Octaviano Gonzales Fabela, a distinguished bacteriologist of the corporation and provided him with a proper outfit and small animals so that he could carry on his studies by means of the proper experiments. As soon as this Doctor reached Mazatlan, he commenced his clinical studies of a patient who was suffering from the pneumonic form of the Plague, collecting his sputa and the liquid from the peri-ganglionary tissues of a buboe and was able to prove the existence of the

Yersing bacillus. With a pure calculation of this bacillus he inoculated some Guinea pigs that shortly after presented the characteristics of the disease. On receipt of this diagnosis by wire on the 31st of December, the Supreme Board of Health publicly declared that the epidemic which had spread in the Port of Mazatlan was the Bubonic Plague, and communicated this fact to the Federal authorities of the Republic, of the States, to all the Sanitary Delegates in the ports, to the Sanitary authorities of the United States and to the International Committee of the American Republics, whose headquarters are in Washington.

NUMBERS OF CASES AND DEATHS

The number of cases that were reported to the authorities were 351, and the deaths 296, covering the period from the 13th of December, 1902 up to the 15th of March of 1903. The number of deaths is entirely exact, as under the laws of Mexico, no body can be buried without a certificate from the Registry Office, giving the cause of the death. The same thing cannot be said as to the number of cases of the disease, as in Mazatlan the same thing happened that has been observed in all parts of the world, which is that many cases are kept secret in order to prevent the patients being taken to the Lazaret. The number of these hidden cases was greatly diminished as soon as the house to house visits were arranged and a constant watchfulness was exercised over all the houses in the town. The fear that the poor and ignorant classes have of being taken to the Lazaret, induced many unfortunate people to leave the town, and many were collected from the roads and taken to the Lazaret. This explains the difference between the cases observed and the deaths.

The largest number of cases observed in any week was 65, and the largest number of deaths 56. The

decrease was rapid and marked up to the complete disappearance of the epidemic.

MEASURES INTENDED TO PREVENT THE RE-APPEARANCE OF THE DISEASE.

As we could not say that all danger had passed simply because the epidemic had disappeared, it became indispensably necessary to take the proper measures to prevent its re-appearance. The character of this paper will not allow me to enter into details, and I will confine myself to a relation of the principal steps taken for that purpose.

In the first place, the domiciliary visits were kept up and especially in those houses that were occupied by the first cases, when the nature of the epidemic had not yet been established. These visits were also repeated in the houses that contained patients whose diagnosis was confirmed, and all the houses adjoining these or that were inhabited by persons who came into direct or indirect contact with the victims. In all of these houses, the disinfection was made for the second time and if they were of small value they were in many cases destroyed. The disinfection of the clothing which was found in all of these houses was also repeated and a commencement was made with the clothing that was deposited in the pawn shops. The careful cleaning of the streets was kept up, of the slaugter houses, markets and other meeting places, as well as the destruction of the garbage by fire. Before re-opening the schools which were closed at the commencement of the epidemic, the school-rooms were disinfected, and before allowing religious services to be resumed, the persons who attended these services were required to present themselves with clean clothing that had previously been disinfected and with a certificate that they had bathed. The destruction of the rats and mice was continued by

the merciless war that was carried on against them during the whole period of the epidemic, and a special commission charged with making a bacteriological study of the blood and tissues of these animals as they were caught in the town, has continued its labors for a year and a half since the epidemic terminated and has proved that they are no longer infected with the Plague. The Medical Commission which issued certificates of health to all travellers leaving Mazatlan and which was charged with the disinfection of their clothing and baggage, as well as of the goods shipped out by sea or land continue in the active exercise of its functions. The Sanitary Stations that were established around Mazatlan also continued their functions but with an improved service and overlooked, not only the passengers and goods that left the town, but also those that arrived on their return after having emigrated during the course of the epidemic.

In the villages in which cases of Plague appeared, as I have already mentioned, the same precautions were continued as in Mazatlan.

The extermination of rats was advised, not only in the places that were invaded but was also carried out in a great number of cities of the República, and especially in Culiacán, at a distance of 240 kilometres from Mazatlan where over 35,000 rats had been killed.

In consequence of the above precautions, the Plague did not reappear in Mazatlan or any other point in Mexican territory.

RESOURCES EMPLOYED FOR STAMPING OUT THE PLAGUE.

The Municipality and District of Mazatlan furnisned all the funds that they were able to dispose of for the defense against the Plague; but the State of Sinaloa at once came to the assistance by appropriating a sum of $20,000.00 to cover the first necessities for the moment.

The Federal Government also forwarded $20,000.00 for the improvement of the conditions of the Lazaret and isolation wards, as well as to repair the streets and destory a sewer that was in bad condition.

The Federal Government also contributed by sending physicians, medical students, disinfectors, large disinfecting furnaces of the Geneste Herscher Model; a supply of disinfecting substances, sprinklers, etc., and it also established and maintained at its own expense, the Sanitary Stations above referred to which were situated at more or less considerable distances from the city. It also furnished the Yersin Curative Serum, as well as the Haffkine and Besredka Vaccine. It established a Lazaret in the Port of Guaymas and perfected and thoroughly fitted up the existing one in Acapulco; sent a physician whose energies were dedicated to the exclusive service of the latter institution, and made provisions in every way necessary for the thorough execution of all the measures that were adopted.

These resources would, nevertheless, have been insufficient to combat the epidemic, as in the Port of Mazatlan alone the expense amounted to $3,000.00 per day in official disbursements.

At the sametime, a Charity Board was organized in the Capital of the Republic, that in a few days raised a sum of $100,000,00, that was promptly remitted to Mazatlan All the States of the Republic also hastened to send their subscriptions; but in order to organize the collections and utilize the contributions of all the citizens of the Republic, a National Commission was formed which collected over $300,00,000, including the sum above mentioned. It is worthy of note that every one of the inhabitants of the Republic, and especially those who compose the foreing colonies, contributed their mite to aleviate the sufferings of our brethern in Mazatlan. This sum of $300,000,00, required no

sacrifice on the part of the community, but nevertheless was of immense results, not only on account of the number of lives which it saved and the assistance given to the poor, but also because it has served to prevent the epidemic from spreading in our country, where it would have brought about the most horrible disaster, besides ruining its trade and prosperity.

Mexico, January, 1905.

E. LICEAGA.

EL TRACOMA EN MEXICO

MEMORIA PRESENTADA AL 4º CONGRESO MÉDICO PAN-AMERICANO, REUNIDO EN PANAMÁ, POR
EL DR. JOSÉ RAMOS,
PROFESOR EN LA ESCUELA NACIONAL DE MEDICINA DE MÉXICO, MIEMBRO DE LA ACADEMIA NACIONAL DE MEDICINA DE LA MISMA CIUDAD, ETC.; DELEGADO OFICIAL DEL SUPREMO GOBIERNO MEXICANO EN DICHO CONGRESO.

Mucha importancia tiene para nosotros, todos los americanos, el conocer la distribución, frecuencia y caracteres especiales que las enfermedades revisten en cada uno de los numerosos países que forman nuestro vasto continente. El agrupamiento de los respectivos datos sobre la materia servirá para la formación de una Geografía Médica Pan-Americana, obra á no dudarlo útil é interesante.

Claro es que la reunión de todos los conocimientos que un trabajo de tal índole demanda, no puede ser la obra de una sola persona; muchos hombres de ciencia tienen que reunir sus esfuerzos para llegar al resultado, y es de de

searse que los médicos residentes en las diversas naciones de la América suministren su contingente, en lo que se relacione con cada uno de los ramos que especialmente cultivan.

Estas consideraciones me han inducido á tratar preferentemente, en la sección de Oftalmología de este ilustrado Congreso, acerca de la repartición, modalidades clínicas y caracteres particulares con que en México, país que tengo la honra de representar, se observa una afección ocular que ha revestido y revestirá una grandísima importancia: "El Tracoma". Este terrible mal conocido desde los tiempos más remotos puesto que Hipócrates se ocupó de él y de su tratamiento, ha sido estudiado por los médicos más antiguos y pertenecientes á distintas escuelas como Celso, Severo, Rhazes, Paul d'Egine etc.

Desde esos lejanos tiempos hasta nuestros días la citada afección que bien merece el nombre de cosmopolita, ha sido paciente y sabiamente estudiada por distinguidos oculistas de todos los países cultos, pero en despecho de sus loables esfuerzos, existen aún varios puntos obscuros referentes á la naturaleza, á la etiología y á la estructura de las granulaciones tracomatosas.

Largo é infructuoso sería entrar en reminiscencias históricas, y en prolijas citas de autores, cuyos escritos son bien conocidos para mi sabio auditorio.

Bástame recordar que se han dividido las opiniones acerca de la unidad ó dualidad de la conjuntivitis folicular y el tracoma propiamente dicho; alguna vez dije yo lo siguiente en la Academia de Medicina de México:

"Estas ideas contradictorias entre sí se apoyan en las observaciones clínicas de sus autores y en sus estudios anatómicos é histológicos diversamente interpretados por ellos."

"Soemich establece una diferencia radical entre las

masas linfoides y la hiperplasia linfoide: las primeras caracterizan según él, la conjuntivitis folicular, mientras que la segunda sería propia de la conjuntivitis granulosa verdadera De Wecker es tambien partidario de esta dualidad morbosa, para Iwanoff habría en el caso del tracoma, un desarrollo de verdaderas glándulas tubulosas anormales, más numerosas en la conjuntiva palpebral superior; les concede tal importancia, que segun él constituirían el verdadero carácter anatómico del tracoma, no siendo las granulaciones sino consecuencias pasajeras. La persistencia de las glándulas tubulosas, explicaría la tenacidad del tracoma, pues mientras aquellas existen, la afección no puede desaparecer. Para otros autores y entre ellos Mackenzie, las granulaciones están constituídas por la hipertrofia de las papilas y de las glándulas conjuntivales. No ha faltado por último, quien considere las granulaciones como grupos de sarcomas; de esta manera pensaba Himly."

"En estos últimos tiempos el modo de ver ha variado, y salvo las divergencias que antes hemos señalado, las opiniones sobre la constitución anatómica del tracoma, tienden á uniformarse. Hoy se desechan las ideas de Iwanoff, no admitiéndose que glándulas verdaderas pudieran desarrollarse en virtud de un proceso patológico habiéndose demostrado además que lo que Iwanoff tomaba por glándulas no eran sino intersticios ó fisuras que existen entre las papilas hipertrofiadas revestidas de su epitelio. Otras opiniones como la de Himly no se toman hoy en cuenta, y casi todos están de acuerdo en admitir que la granulación tracomatosa es un producto específico constituído por una red capilar muy fina, que contiene en sus mallas, masas formadas por núcleos esféricos ú ovoideos, que no deben ser confundidos con las celdillas linfoídes ordinarias; este modo de ver enunciado primero por Sattler (de Praga), poco difiere del de Remy, que considera las granulaciones como formadas de una producción

exagerada de celdillas tiernas y de núcleos; las papilas según dice están hipertrofiadas, revestidas de epitelio cilíndrico y separadas las unas de las otras por hendeduras longitudinales, que simulan sacos glandulares. Fallet (de Bruselas), consideraba las granulaciones tracomatosas como producciones malignas análogas al tubérculo. Roehlmann concibe el tracoma como una inflamación folicular ulcerativa, terminando en la destrucción de los elementos adenoides y en su substitución por tejido de cicatriz en forma de bridas radiadas, y algunas veces teñidas en amarillo por pigmento hemático. A medida que se prolonga el trabajo ulcerativo, más se estiende la cicatriz, llegando á ser invadido el tarso; este se retrae destruyéndo parcialmente las glándulas de Meibomius; el proceso patológico puede limitarse á una porción de la mucosa ó extenderse á su totalidad. El pannus corneal tendría como lesiones fundamentales, folículos tracomatosos análogos á los de la conjuntiva, aunque aplastados; se observa segun el propio autor en los escrufulosos sobre todo, y comienza por placas ó infiltraciones sub-epiteliales sin levantamiento del epitelio corneal y con vascularización que marcha de la periferia al centro. En las formas crónicas, la conjuntiva se infiltra en su totalidad, y sufre segun Burkard una degeneración mixomatosa muy marcada; esta variedad constituye el tracoma blando ó suculento de Schweigger. El doctor Goldzieher (de Budapesth), describe una forma rara de tracoma, llamada por él *simili-tuberculosa*, en la cual ha encontrado celdillas gigantes análogas á las de los tubérculos aún cuando se trate de dos procesos de distinta naturaleza."

Fué Severo el que primero consideró el tracoma como una enfermedad de naturaleza especifica, opinión que no fue confirmada, segun Panas, sino hasta la época de la expedición francesa á Egipto; el mismo profesor añade, que de los numerosos trabajos publicados en esa época el mejor concebido es el de Danois Beng. Para este autor

hay lugar de distinguir dos formas de oftalmía: una catarral benigna, y otra purulenta grave; las granulaciones para las cuales reserva exclusivamente el nombre de tracoma, desempeñan el papel de las placas de Peyer en la dotienenteria. Esta última forma es considerada por él como específica, juzgando el resto como simple inflamación catarral. Parece que en nuestros días todos estan de acuerdo sobre la especificidad del padecimiento, aún cuando sea un hecho innegable que el estado constitucional del individuo, el terreno, sea factor importante en el grado de intensidad del mal.

Algunos como Neisser, Haab, Leber, Sattler, (de Praga), han incriminado á un micrococus, que se presenta en grupos de tres ó cuatro elementos, y que había sido encontrado no solo en las secreciones, sino en el tejido conjuntivo mismo, y en las granulaciones, insertado casi siempre en las celdillas.

Para otros, el agente específico de la lesión, sería un diplococcus muy parecido al de Naisser, y un bacilus fino, cuya presencia sería constante en el pus (Koch]; un germen semejante al staphylococcus albus (Kucharsky), un diplococcus muy facil de teñir con los reactivos y tendiendo á agruparse como las sarcinas (Michel); microorganismos que solo se diferencian de los de la blenorragia por su volumen más pequeño (Poncet), etc.

Ya se admita uno ú otro de estos gérmenes como causa del tracoma, nunca podrá negarse que como todos los microbios debe atenuar ó exaltar su virulencia, no solo en virtud de las condiciones especiales del enfermo (edad, constitución, raza, condiciones higiénicas, enfermedades anteriores etc;), sino tambien por circunstancias extrínsecas que como la altitud y la temperatura atmosférica tienden á modificarlo mas ó menos. Tampoco sobre estos puntos reina un acuerdo unánime; en diversas reuniones científicas se han tratado estas diversas cuestiones emi-

tiéndose ideas muy variadas; en el X Congreso Médico Internacional reunido en Berlin en 1890, y en el que tuve también la honra de representar á México, hubo una interesante discusión sobre el tracoma, habiendo sido relatores los Doctores Roehlmann y Schmidt-Rimpler. Ambos estuvieron de acuerdo en considerar la conjuntivitis folicular y el tracoma, como dos afecciones distintas así en sus lesiones anatómicas, como en sus caracteres clínicos, aun cuando puedan ofrecer algunas semejanzas; aseveró el Dr. Roehlmann, que el tracoma es una enfermedad directamente inoculable, y que la trasmisibilidad de su virus, constituído por el *diplococcus trachomatosus*, es independiente de las influencias atmosféricas. Segun el Dr. Schmidt-Rimpler, no es el *diplococcus trachomatosus* el microbio especial, pues segun él, no se le ha encontrado en todos los casos, sin que deje de tratarse por esto de una enfermedad de naturaleza infecciosa, perfectamente definida. Añadió que aún cuando el virus pueda ser directamente transmitido, es necesario para que se produzca el contagio, que haya una predisposición especial de la mucosa, y que las condiciones climatéricas influyen en mucho en la propagación del mal, habiendo él encontrado el tracoma endémico, en altitudes superiores á trescientos cincuenta metros; aún cuando se haya dicho lo contrario. Terminó, indicando la conveniencia de llamar la atención de los Gobiernos sobre una enfermedad ocular tan grave y que tan directamente afecta á la parte activa de las poblaciones. Los Doctores Mayweg y Lagestschnikow (de San Peterbusgo) tambien se declararon partidarios de la dualidad morbosa considerando el tracoma como una enfermedad infecciosa, que se transmite por contagio, y la conjuntivitis folicular, como una afección desprovista de especificidad.

Según el Doctor Vicherkiewiez (de Posen), no es difícil diferenciar ambas afecciones, en los países en que el tracoma es raro, pero puede llegar á ser muy difícil

en aquellos en que son frecuentes las formas graves, como acontece en el lugar de su residencia. En contra de la opinión del Doctor Roehlmann, cree el Doctor Sulzer (de Wintherthar), que la influencia atmosférica es importante en el contagio del tracoma, habiendo observado en la isla de Java, que cuando sopla el viento cargado de polvo, el mal se propaga con mayor facilidad, presentándose entonces casos graves y frecuentes. Según el Doctor Sattler, la enfermedad pierde su poder contagioso arriba de ciento cincuenta metros sobre el nivel del mar, aun cuando haya muchas excepciones; cree que la altura es favorable para la curación, pero sin conferir inmunidad absoluta. El Doctor Reich (de Tiflis), refirió haber observado numerosos casos de tracoma en altitudes superiores á dos mil metros.

En lo que concierne á la influencia etnográfica, el Doctor Chibret afirma que la raza Celta goza de inmunidad especial para el tracoma; dijo haber llegado á este resultado, estudiando la distribución del mal entre las diferentes razas europeas, y consultando por escrito á varios oftalmologistas residentes en diversos países. Sus estudios que sobre este punto hizo en Auvernia, lo convencieron de lo raro que es ahí la afección de que se trata, no obstante de que muchos de los habitantes viven en las peores condiciones higiénicas, durmiendo aglomerados en establos, y siempre sucios; cuando por rareza llega á presentarse en alguno de ellos el tracoma, no ofrece tendencia ninguna á la propagación, sino que se extingue sobre el lugar; aún cree que el virus tracomatoso pierde parte de su virulencia pasando por un celta.

El Doctor Swon-Burnett de Washington, refiere que desde 1876 ha notado la inmunidad de la raza negra para el tracoma, y que entre seis mil negros que para distintas afecciones oculares le han consultado en los Estados Unidos, sólo pudo ver un caso de tracoma.

En lo que concierne al poder contagioso del mal, el Doctor Cohn de Breslau, asegura ser tan marcado, que en circunstancias ordinarias, sólo había el uno por ciento de tracomatosos entre 5,000 alumnos de diversas pensiones; habiendo hecho subir esta cifra hasta setenta, y aun ochenta por ciento, una epidemia generalizada que pudo observar; el contagio se propagaba por los utensilios que servían para el aseo personal.

A estas opiniones que acerca de la etiología del tracoma fueron emitidas en el Congreso de Berlín, debo añadir en lo que concierne á la altitud, que de Graeffe, considerando los países elevados particularmente favorables, recomendaba á los tracomatosos la permanencia en Heiden (Saint-Gall). Chibret asegura que en la meseta central de Francia, el tracoma pierde su poder contagioso á 230 metros de altura; una observación análoga ha hecho Sessel relativa á la elevada meseta de Baviera; en los países calientes como Argel, la altitud debe ser mayor, para que se presente tan saludable efecto; en el Brasil comienza según Sad á 800 metros.

En lo que á razas se relaciona, se ha achacado á los judíos ser más propensos á la afección, lo que según Panas, es debido tal vez á la miseria y á la falta de higiene de los representantes de esa raza, sobre todo en Rusia y en Polonia,

Todos los observadores admiten que siendo el mal indudablemente contagioso, es favorecido en su aparición por las malas condiciones higiénicas y la debilidad general del organismo, por la aglomeración, las lluvias, los grandes calores, los vientos tropicales, y el desbordamiento de los ríos, siendo más común observarlo en los jóvenes, que en los niños y en los viejos.

México es un país recorrido en su vasta extensión por dos cordilleras principales (continuación de los Andes), que teniendo un núcleo común en el Zempoaltecatl (Esta-

do de Oaxaca), se separan en ese punto, y divergen más y más hacia el Norte, corriendo casi paralelamente á las costas, y comprendiendo entre una y otra una extensa altiplanicie llamada mesa central; de uno y otro lado de la cordillera que limitan esta extensa mesa, el terreno, por una serie de escalones, va descendiendo de nivel, hasta los litorales del Golfo y del Pacífico. La altura de la mesa central varía de un punto á otro, siendo considerable en todos ellos. La ciudad de México, se encuentra por ejemplo á 2,260 metros, sobre el nivel de mar, Toluca, á 2,620 metros, San Luís de Potosí á 1,800 y así sucesivamente.

Las razas que constituyen la población del país, son muy variadas: hay extranjeros de diversas nacionalidades y de ambos continentes, indígenas que pertenecen también á razas diferentes, y criollos, que son de raza cruzada, primitivamente de español é indígena.

El pueblo bajo vive en condiciones higiénicas desfavorables lo mismo en las grandes ciudades que en los campos.

No obstante esto, el tracoma es una enfermedad no común en la República mexicana, y verdaderamente rara, y aun excepcional en los lugares elevados que se encuentran comprendidos en la extensa mesa central.

Sin duda alguna la altura contribuye de un modo poderoso á la rareza del mal; aún cuando una gran parte del país se encuentra en la zona tropical, puesto que sus límites están entre 15º y 32º y minutos de latitud N., el clima se suaviza por la altitud, habiendo aún lugares, en que se hace sentir bastante el frío.

No solamente es raro el padecimiento, sobre todo en la ciudad de México, sino que en los pocos casos observados reviste un carácter bastante benigno, pues si bien es cierto que es constantemente de larga duración,

nunca se presenta con los signos de gravedad observados en otras comarcas; casi jamás se observa supuración, y cuando excepcionalmente existe es moderada, no revistiendo la forma de oftalmía, propiamente dicha, y cediendo con facilidad; no origina grandes sufrimientos al enfermo, y cuando llega á presentarse el pannus, que muchas veces falta, es muy limitado á la parte superior de la córnea, llegando á desaparecer y dejando sólo algunos vestigios. Las deformaciones que el tejido de cicatriz deja en el párpado, son por lo común poco acentuadas, siendo extraordinario que se necesite recurrir á una operación quirúrgica para remediar los inconvenientes consecutivos (el más común ha sido el entropión que ha sido operado por algunos oftalmologistas); las ulceraciones corneales pocas veces se presentan y por regla general ceden al tratamiento; las perforaciones de la córnea y los estafilomas deben presentarse tan raras ocasiones, que no recuerdo haberlas visto hasta ahora. Ni yo, ni otro oftalmologista de los que he consultado sobre la materia, hemos observado jamás en la ciudad de México un sólo caso de contagio, aún cuando se tratase de personas de las últimas capas sociales, viviendo en las peores condiciones y descuidando en lo absoluto el aseo personal.

Varias veces se observa entre nosotros la conjuntivitis folicular, ya aislada, ya asociada al catarro primaveral, descrito clínicamente en México por el Doctor Carmona y Valle, con el nombre de periquerato—conjuntivitis exhuberante, y que no es frecuente, puesto que en una estadística del Hospital oftalmológico de Nuestra Señora de la Luz se enumeran veintiún enfermos de periquerato—conjuntivitis entre 4,103 enfermos de diversas afecciones oculares; la conjuntivitis folicular que en México observamos, nunca se confunde con el tracoma, siendo constantemente benigna; sus lesiones radican de preferencia en el fondo del saco conjuntival inferior, siendo poco ó nada acen-

tuadas en la conjuntiva del párpado superior, y en el fondo de saco correspondiente; las pequeñas elevaciones que en la membrana mucosa se advierten, son siempre pequeñas, esferoidales, separadas por surcos poco profundos, que no dibujan estrías amarillentas; jamás se presenta el pannus durante la evolución del mal, ni hay escurrimiento purulento, notándose sólo lagrimeo moderado y molestias soportables, como sensación de cuerpo extraño y escozor ligero; aun cuando tiene tendencia á la cronicidad, cura sin grandes trabajos, cuando es atendida oportunamente.

Nunca se ha visto que la conjuntivitis folicular llegue á convertirseen verdadero tracoma; los síntomas, la marcha, los trastornos funcionales revisten caracteres especiales en cada enfermedad, por lo cual uno mi opinión á la de aquellos que aceptan la dualidad morbosa, y juzgo que así en su naturaleza, como en sus resultados, se trata de dos afecciones del todo diferentes.

Las vías de comunicación cada vez más rápidas y cómodas, pues hay ya muchos ferrocarriles en el país, facilitan la llegada de los enfermos á la Capital de la República, á la que concurren á nuestras clínicas ó consultorios, llegando de todos los Estados de la República. Se ha podido notar por esta feliz circunstancia, que en toda la mesa central, es rarísima y relativamente benigna la conjuntivitis granulosa; en los litorales del Golfo y del Pacífico, el padecimiento es más común y suele revestir formas más graves, sin asemejarse nunca, ni por su frecuencia ni por su intensidad, á lo que se observa en otros países tropicales.

Mencioné las diversas razas que forman la población del país, y ahora debo decir que la mayor parte de los casos raros de tracoma que observamos, se presentan en extranjeros, sobre todo en españoles, y algunos americanos que llegan á México con el mal que contrajeron en su

país. De todos estos casos importados, no conozco uno sólo que haya terminado fatalmente; más ó menos tarde han cedido al tratamiento, no dejando sino pocas reliquias; estos casos de importación, tampoco se han transmitido por contagio, aún cuando ha faltado el cuidado de evitar la trasmisión, prueba evidente que el germen tracomatoso, aún el exótico que es trasmisible en su país de origen, pierde llegando al nuestro su virulencia y su poder contagioso. Un número menor de casos se observa en personas de la raza cruzada, naciendo el mal en el país mismo, siendo verdaderamente raro encontrar la afección, en los individuos de las diversas razas indígenas, no obstante que en su mayoría cometen faltas detestables contra la higiene.

Lo expuesto confirma, á mi modo de ver, que si la altura atenúa notablemente la gravedad del tracoma, privándolo de su poder contagioso, como se observa en los españoles que llegan ya con la afección, no debe perderse de vista la influencia etnológica, pues para este mal infeccioso, como para otros, no todas las razas ofrecen la misma predisposición.

Mi distinguido amigo y colega el doctor J. Santos Fernández, en un importante trabajo, en que me hace la honra de citarme ("Estadística del tracoma en Cuba," trabajo presentado á la Sociedad Oftalmológica Mexicana, 1904), hace notar la rareza del tracoma en la Isla de Cuba, acerca de la cual dice: "La razón de que en Cuba el tracoma no reviste la gravedad que en otras partes, obedece á que gracias á la riqueza del país hoy mermada, pero no desaparecida, carece de verdadero proletariado, y además el clima obliga á vivir fuera de los locales, y estos son siempre amplios, aún los de las clases más necesitadas, y es sabido que el hacinamiento engendrando la suciedad, es el factor más propicio para el desarrollo del tracoma."

"Poco menos de un tercio de la población de Cuba es negra y mestiza, y es innegable la relativa inmunidad del

negro para el tracoma." Añade el citado doctor Santos Fernández, que por causa diferente (la altura), el padecimiento es más raro aún en la capital de México, según resulta de los estudios de los oculistas mexicanos, entre otros el que os dirige la palabra.

Según la estadística del repetido doctor sobre 36,242 enfermos de los ojos, ha encontrado en 28 años, 1,181, granulosos; fácil es deducir que esto corresponde á 32, 6 por mil, dato muy semejante al que señala el doctor Enrique López de la Habana, quien encontró 35 tracomatosos enmil enfermos de distintas afecciones oculares; según consta en su trabajo estadístico, publicado en aquella Ciudad, en 1860.

Si es notable la rareza del tracoma en Cuba, lo es más aún en la República Méxicana, puesto que en 14,000 enfermos de los ojos sólo se presentaron 200 tracomatosos, lo que da la cifra 14, 3 por 1000, según la estadística del doctor A. Chacón de México.

En lo que respecta á la estadística de la ceguera originada por el tracoma, añadiré, que en los datos recogidos según mis indicaciones por mi discípulo el doctor Gregorio C. Leal, de varias clínicas, entre otras la que yo daba en ese tiempo en el Hospital de San Andrés, entre 675 ciegos sólo uno se encontró cuya ceguera fuera debida al tracoma, siendo el paciente de la costa del Golfo.

Atendiendo bondadosamente á mi indicación, el doctor D. Juan Ramírez de Arellano, Director de la Escuela Nacional de ciegos, me suministró la estadística de los alumnos existentes en aquel benéfico establecimiento, el día 19 de Diciembre de 1904. Entre los 278 ciegos, de diversos estados de la República, que ese día se encontraban en el Colegio, sólo uno debía su ceguera á la afección tracomatosa. En una estadística perteneciente al doctor Trousseau, de los pensionados del Hospicio de Quin-

ze-Vingt, en París, sobre 627 ciegos, había 24 cuya ceguera fué originada por el tracoma.

Si se comparan estas cifras y otras que pudieran citarse aún mas desventajosas, se verá que *la mesa central de la República Mexicana, es verdaderamente privilegiada en lo que se refiere á la frecuencia y relativa benignidad del tracoma;* por regla general no se necesita recurrir allí á las numerosas operaciones quirúrgicas que se han recomendado en otros países, para combatir tan tenaz afección, bastando muchas veces los cateréticos ligeros, los antisépticos y los medios que llenan las indicaciones sistemáticas, para combatir el mal, si bien es cierto que el padecimiento es casi siempre prolongado. El doctor Chavez, Director del Hospital Oftalmológico, me ha comunicado el haber obtenido siempre buenos resultados, tocando la superficie tracomatosa con una solución de Vasógeno Yodado en agua esterilizada al 4%, previa cocainización, por ser muy dolorosa la aplicación del medicamento; me ha referido también que en los pocos casos en que ha tenido que operar, ha empleado de preferencia el "brosage" ó la expresión conforme al método de Knapp, sin haber necesitado la extirpación del fondo de saco sino en 4 casos. Yo por mi parte, he recurrido al "brosage" en muy pocos casos y una vez á la extirpación del fondo de saco, no habiendo necesitado ningún tratamiento quirúrgico en los demás casos que se me han presentado.

No debo vacilar por lo mismo, en recomendar á los tracomatosos su permanencia en las altiplanicies mexicanas, como de Graeffe recomendaba en Europa á sus enfermos, la permanencia en Heiden, cantón de Saint-Gall, Suiza.

México, diciembre 19 de 1904.

COMENTARIOS

SOBRE LA HISTORIA, LA ETIOLOGÍA Y LA PATOGENIA DE LA FIEBRE AMARILLA.

Dueña de las costas marítimas hasta los 38º de latitud Norte y Sur del Ecuador, siempre ha existido la fiebre amarilla en las poblaciones del litoral del Orinoco, y cuando ha hecho incursiones á una gran faja interna de Venezuela, donde se encuentran lugares de temperatura muy fría, templados y ardientes, algunos de estos últimos han sido atacados, como desde tiempo inmemorial Caracas por ejemplo, cuya temperatura media es de unos 22º. En Junio de 1895 presencié la primera incursión que hizo á una estación de ferrocarril de unos 300 habitantes y 28º de temperatura media llamado El Vigía, en el Estado Mérida. Hizo estragos en los oriundos del cercano ramal de la Cordillera de Los Andes residentes allí, y en los transeuntes hasta entonces indemnes.

En Colombia, endémica en las poblaciones de la Costa Atlántica y probablemente en las del Pacífico, esta

fiebre se encuentra en todo el litoral del Río Magdalena, de donde ha hecho incursiones á Tocaima, Ocaña, Girardot, Guaduas, La Mesa, Anapoima, etc;

"La fiebre amarilla no se acomoda—dice Brault—con las latitudes frías, ni tampoco con las altas altitudes: no pasa, parece, de 150 á 200 metros en Estados Unidos y de 700 en el Brasil". Ha respetado á veces las grandes alturas andinas, por cuyo motivo y por la enorme distancia á que están de los focos endémicos, algunas poblaciones de climas cálidos se han sustraído de su azote (Bucaramanga, Sube, Villavicencio etc.); pero al contrario de lo que generalmente se dice, en Colombia el tifus icteroide ha escalado enormes alturas. Por ejemplo: la población llamada La Mesa, que está situada á 1305 metros sobre el nivel del mar, según el Ingeniero J. Liébano; Ocaña, que lo está á 1.254, según el Ingeniero G. Vázquez, y Guaduas, que lo está á 1.148 según el sabio F. J. de Caldas. (Revista Médica de Bogotá número 283)

El año 1883 hizo, por primera vez incursión de Maracaibo á Cúcuta, población situada á 360 metros sobre el nivel del mar (G. Vasquez), donde muchas epidemias que se han sucedido en corto lapso han sido aterradoras, por la gran mortalidad que han causado. De Cúcuta se extendió en seguida á San Antonio del Táchira (Venezuela), donde también es endémica y donde se ha detenido no obstante que este lugar aduanero es centro de relativo gran tráfico, de que nadie ha tomado contra ella las más rudimentarias medidas higiénicas, y de haber enfermado, fallecido y sido sepultadas allí millares de personas; así como también, por último de que esto mismo ha acontecido en poblaciones cercanas á éstas, poblaciones que tienen una temperatura poco menos ardiente, y de que el *stigomya fasciata* vive en ellas tranquilamente.

En otra dirección se extendió el año 1893, ó próxima-

mente, de Cúcuta á Arboleda, lugar de 26º de temperatura donde también es endémica.

Apanaje de la edad media de la vida, dícese generalmente que los niños y los ancianos están exentos de esta fiebre. Cierto es que la época de la vida comprendida entre los 15 y los 50 años paga el mayor tributo, lo que depende de que los individuos de dicha época de la vida se exponen más al contagio, por la imprescindible necesidad que tienen de procurarse su propia subsistencia y la de su familia, como también de que los ancianos son menos numerosos que ellos. Pero esta fiebre no respeta edades, en Cúcuta al menos, donde no distingue entre ancianos y niños hasta de tierna edad. Tampoco respeta sexos, y si la mujer es atacada con menos frecuencia, lo debe á que se expone menos que el hombre al contagio.

Ataca menos á la raza negra, porque esta raza ha nacido y crecido junto con ella, en la zona que les es común; pero individuos de raza negra, aislados en pueblos del interior de nuestro Continente donde no ha llegado aún este azote, y colocados en condiciones de receptibilidad idénticas á las de los demás raizales contraen como estos, llegado el caso, dicha enfermedad. Además—enfermedad virulenta y por consiguiente microbiana—sabemos que agota de una sola vez su acción en el organismo que ha tocado. La raza india americana está tan expuesta al contagio como la raza caucásica; pero los indios que moran en las costas marítimas, como sucede por ejemplo con los de las costas de Colombia y de Venezuela gozan de la misma inmunidad que los ciudadanos de dichas costas, donde la fiebre reina endémicamente.

Su primera aparición, lo mismo que la de otras enfermedades está envuelta entre las sombras del pasado, lo que proviene de la mayor escasez de conocimientos que con razón tuvieron nuestros antepasados para hacer un diagnóstico.

No está demostrado que sea originaria de las Antillas, como la rutina nos lo enseña respecto de ella como con respecto á la sífilis; lo que está generalmente aceptado es que, inseparable compañera del paludismo, siempre ha sido el eterno huésped de las costas africanas y de las americanas situadas en la Zona Tórrida.

Al decir de médicos que ejercen en esta ciudad de Panamá, hay en el Istmo poblaciones donde jamás ha penetrado, aunque sus naturales la han importado de esta capital.

Confieso francamente que aunque en tres épocas distintas he estado practicando en esta ciudad no me ha tocado en suerte ver en el Istmo el primer caso de fiebre amarilla; pero no por esto pretendo poner en duda su existencia. Ella ha reinado en esta ciudad, Colón y Portobelo desde la época de la Conquista: desde 1726 se indicó su presencia en Colón y Portobelo, y la mejor prueba de que ha existido está en que han gozado y gozan de inmunidad las actuales generaciones de estas tres ciudades. Más aún, por lo aplanado de Los Andes panameños no puedo aceptar que haya parte alguna del Istmo cuyos naturales, si no son hijos de extranjeros indemnes puedan contraerla. Como los focos de fiebre amarilla lo son también de paludismo (aunque la recíproca no es exacta), quizá se ha tomado por fiebre amarilla la biliosa grave, de la cual se distingue:

1º Por la facies: tez y esclerótica francamente amarillas, desde el primer día, en la fiebre biliosa; color amarillo muy pálido y sólo desde el cuarto día en la fiebre amarilla.

Facies de embriagado que ríe sardónicamente, en la fiebre amarilla; nada en la biliosa.

2º Por la congestión de la mucosa faríngea: nula ó apenas apreciable—como la de otra pirexia cualquiera—en

la fiebre biliosa; se la vé frecuentemente y muy pronunciada, en la fiebre amarilla. Muchas veces en vez de esta congestión—y esta observación no ha sido citada, que yo sepa,—se encuentra los folículos mucosos de la faringe en un estado particular de arección, que simula la hipertrofia de dichos folículos, los cuales se presentan bajo forma de lágrimas en relieve, verticalmente situadas, de 5 milímetros de extensión más ó menos, cuya gruesa extremidad está situada hacia arriba y cuya coloración es más pálida que el resto de la mucosa.

3º Por la congestión generalmente muy pronunciada del hígado y el bazo, en el paludismo; congestión que falta á veces, á la palpación, en la fiebre amarilla.

4º Por la gran cantidad de albúmina (6% más ó menos) eliminada por el febricitante amarillo; insignificante —si acaso—por el de fiebre biliosa.

5º Porque en la sangre del paludoso no tratado se encuentra siempre el hematozoario de Laveran, que falta en el febricitante amarillo no complicado de paludismo.

6º Por la duración: cíclica y siempre un número impar de días—3 á 5—en la fiebre amarilla(7 y 9 en opinión de otros); variable en la biliosa.

7º Ya en el segundo período ó período amarillo, la gran lentitud del pulso, (hasta 28 pulsaciones por minuto) frecuente en los casos de fiebre amarilla, no se encuentra en esa forma del paludismo. Esa lentitud del pulso permite muchos años en algunos individuos y puede servir para ratificar un diagnóstico.

8º Porque la fiebre amarilla confiere una inmunidad de que no gozan los enfermos de biliosa grave.

9º Porque á consecuencia de dicha inmunidad, la fiebre amarilla hace diferencia entre raizales y extranjeros, mientras que la biliosa no respeta á aquellos; al

contrario, se sabe que un primer ataque predispone á otros.

Por no alargar esta historia paso en silencio la de otros países de América, así como también—porque no tiene mérito de actualidad—la de las múltiples epidemias europeas que han azotado más de 30 veces varias ciudades de España, Italia, Francia, Inglaterra, etc.

Están exentos de fiebre amarilla:

1º Los individuos que la hayan padecido en cualquier época y cualquiera que haya sido la intensidad de ella;

2º Todo hijo de padre y madre que la hayan contraído antes de la procreación;

3º Todo hijo cuyos padres desciendan de progenitores directamente colocados en el caso anterior, y

4º A veces los hijos de los cuales uno sólo de los padres (pero en particular la madre) esté comprendido en el 2º caso ó en el 3º.

No sé yo que una generación más avanzada goce de esta inmunidad por impregnación en el claustro materno; pero dudo de que la cuarta generación goce de este privilegio, si las tres anteriores no han nacido en un foco endémico. Dudo, repito, de que la 4ª generación goce de inmunidad, porque conozco un caso de fiebre amarilla bien averiguado, cuyo padre, nacido fuera de todo foco es indemne porque desciende de padre solamente que está comprendido en el segundo caso.

La incubación de esta fiebre varía mucho y más de lo que generalmente se admite. El Doctor A. Agramonte fija 5 días, como resultado de sus experiencias en la Habana; el Doctor Finlay, 25 días; mis observaciones clínicas dan desde 18 horas hasta 25 días, y algunos médicos extreman este período, quizá con razón. El caso de 25 días es el de un colega bogotano que ejercía en San Antonio del

Táchira, y entre esa población y Bogotá, donde se declaró la fiebre, no hay ningún foco amarillo.

Cúcuta y San Antonio del Táchira están edificados á orillas del Pamplonita y el Táchira, respectivamente, parte del primer riachuelo ha sido desviado para proveer de agua la ciudad, cuyos moradores son aseados; pero dicha ciudad tiene el grave inconveniente de estar á la sombra de una espesa alameda, las raíces de cuyos árboles son el refugio del *stigomya fasciata*, de *anopheles* y quizá del hematozoario. Dichas aguas son potables pero insalubres, por los fragmentos vegetales y animales que reciben de las poblaciones y montañas que atraviesan desde su lejano nacimiento; y estas mismas aguas han alimentado estas poblaciones desde la fundación de ellas antes del año 1883; quiero decir, antes de la primera invasión de la fiebre amarilla. El paludismo, enfermedad dominante en dichas poblaciones se manifiesta sinembargo habitualmente bajo las más peligrosas y raras formas que se conocen.

Más ó menos cercanas á ellas hay unas doce poblaciones hasta hoy indemnes (Santiago, Salazar, Rubio, Táriba, etc.), situadas á una altura poco mayor que esos focos endémicos, y donde en el espacio de 21 años han curado, perecido y sido sepultados millares de individuos contagiados en dichos focos. Además, esas poblaciones han recibido siempre de Cúcuta y San Antonio su mercancía, y son ricas en *anopheles* y *stigomya fasciata*. Estos hechos me indujeron desde hace 9 años á desechar la antigua é infundada opinión del contagio proveniente de las deyecciones, los objetos de uso de los enfermos, los enfermos mismos considerados por sí solos y los cementerios. Tál ha sido mi convicción, que desde entonces acostumbro permitir al convaleciente ó á los dolientes lleven consigo á los lugares indemnes las reliquias de los enfermos, sin que hasta ahora y por mi causa haya habido un sólo caso contagioso.

Aun no es posibe pronosticar la reaparición de una epidemia. Esta fiebre, endémica como he dicho en las mencionadas poblaciones de Cúcuta y San Antonio—que son los principales focos donde he adquirido mi muy escasa práctica—parece extinguirse allá durante largo tiempo, aunque aparentemente persistan las mismas condiciones telúricas ó maláricas á que en otras ocasiones se atribuyó su recrudescencia, y aunque la desafían individuos como los militares revolucionarios, naturalmeute colocados en malísimas condiciones higiénicas, como que carecen de recursos para su subsistencia y de conocimientos para evitar el contagio. Así aconteció en Cúcuta cuando la guerra que principió el año 1899: en mes y medio y en un Ejército de más de 3.00 hombres, tres individuos solamente contrajeron la fiebre, aunque más de la mitad de dicho Ejército estaba en condiciones de receptividad. La época era entonces lluviosa, y el paludismo é infecciones banales del intestino fueron las enfermedades dominantes.

La Junta de Sanidad de la Comisiön ístmica del Canal ha emprendido el saneamiento de esta Capital. Los albañales, las cloacas de desinfección y el acueducto que está en construcción son en mi sentir los medios de defensa más eficaces contra el contagio amarillo. Se emplean otros de importancia menor, que son: la obturación de los depósitos de agua para aprisionar el mosquito; la destrucción de sus larvas por medio de sustancias químicas, y la fumigación de las habitaciones sospechosas, para destruír el contagio. En una ciudad de temperatura ardiente como ésta (28º término medio), relativamente populosa, que tiene las más pésimas condiciones higiénicas, de calles estrechas, sin alcantarillas ni agua, sin patios las casas, donde los habitantes viven hacinados, rodeada en fin de extensos manglares, se puede afirmar que el microorganismo amarillo está y durante mucho tiempo estará ampliamente esparcido, con lo que quiero

significar que de todos estos medios de defensa, la fumigación no pasa de ser por ahora perfectamente inútil. Hoy por hoy al menos es imposible evitar que nuevos *stigomya* ó algún otro desconocido vehículo siembre de algún modo el parásito, pues no está averiguado que solamente estos dípteros sean los agentes del contagio. Suprimidos estos poderosos enemigos—lo que puede ser realizado por el celo de dicha Junta de Sanidad, aunque contra la opiniön general el *anophele* vive perfectamente bien en el agua salada de los muy extensos manglares que hay en Puerto Ancón y otros puertos del Istmo,—resta averiguar bien si el contagio de estas fiebres, amarilla y palúdica, no puede efectuarse de otra manera ó por otro intermedio que el *stigomya fasciata* y los *anopheles*, respectivamente. Y á propósito séame permitido consignar aquí también que, contra la opinión general, el *anophele* vive muy bien y propaga el paludismo en las localidades de aguas sulfurosas. Esto lo he observado detenidamente en unas fuentes estudiadas por Boussingault y llamadas Agua Caliente (Estado Táchira, Venezuela).

La ciencia está de pláceme desde que los sabios King, R. Ross, Finlay, Grassi, Lazear, etc; sospecharon, descubrieron y experimentaron que el agente inoculador del microorganismo amarillo es el *stigomya fasciata*, clasificado por Theobald. Es hoy incuestionable el papel de propagador de esta fiebre que desempeña dicho insecto.

Lejos estoy de negar que el *stigomya* inyecta el microbio con su saliva; pero como soy de los últimos convertidos á esta teoría es de mi deber, en el estado actual de nuestros conocimientos, mirar con reserva el esclusivismo á que los experimentadores han llegado, pues apenas se ha trillado el camino, en medio del cual hay todo un mundo de seres inferiores en cuyo recinto nadie ha penetrado. Por lo demás, la Bacteriología nos dirá, no muy tarde quizá, todo el papel que desempeña cada uno de

nuestros animales domésticos, y la gran variedad de plagas dañinas y de plagas reputadas indiferentes ó inofensivas.

Defínese vagamente la fiebre amarilla diciendo que es una enfermedad contagiosa. Lo es á la manera de las fiebres palúdicas: principalmente por inoculación; pero también quizá por ingestión. Para mí, la fiebre amarilla no es contagiosa sino en el foco infeccioso mismo; mejor dicho, puede serlo también lejos del foco, siempre que haya un vehículo animado (*stigomya faciata*) capaz de inocular el agente hasta hoy desconocido que la produce, ó por ingestión de agua que contenga dicho agente. Por desgracia, no se ha podido hasta hoy descubrir ese agente, como tampoco encontrar el hematozoario del paludismo en el aire ni en el agua de las localidades palustres; pero yo no puedo aceptar que por sí solo el fracaso de estas tentativas autorice para negar que el aire ó el agua de esas localidades pueda producir el contagio, máxime cuando no podemos suponer el hematozoario sino en las tierras ó en las aguas palustres, y cuando se sospecha este mismo vehículo para el agente amarillo. Soy pues de los que cree todavía en el contagio de la fiebre amarilla y del paludismo por ingestión. Si como la êxperiencia lo tiene demostrado, el *stigomya fasciata* y el *anophele* necesitan infectarse primero para poder contagiar al hombre, cómo se infestó, pues, el primer hombre? Lo que la experiencia me ha enseñado es que en los grandes focos de paludismo,—aquellos en que no se encuentra ningún ser humano, como los hay en ciertos lugares de las hoyas del Magdalena y el Orinoco,—el contagio del paludismo es inmancable y violento. Sin duda el ganado y demás animales domésticos pueden, como lo puede el hombre infestar al mosquito. Yo mismo, partiendo de lugares donde nunca ha ingertado el paludismo adquirí uno violento en Villa vicencio (Capital del Territorio de San Martín, Colombia), lugar exento de zancudos, al decir del Doctor Morcillo

(Revista Médica de Bogotá—número 279). La observación y la experimentación nos dividirán hasta el día que el microscopio haya dicho su última palabra; mientras tanto hay que considerar de origen microbiano la causa íntima de la fiebre amarilla, enfermedad general, inoculable, virulenta, de marcha y duración cíclicas.

Prescindo de toda hipótesis respecto de la especificidad del agente amarillo, en cuanto esta especificidad quiera aplicarse como origen del vómito negro, de las manchas violáceas del tronco y la cara en el primer período, y del tinte ictérico en el último. Cualquiera que sea el color del vómito expulsado por el febricitante amarillo, yo creo que proviene simplemente de una mezcla de sangre, bilis y jugos estomacal é intestinal, sin intervención de ninguna otra sustancia. En cuanto á las manchas violáceas—manchas que contribuyen á dar al febricitante amarillo la facies que le es peculiar—ya he dicho que, en mi opinión, provienen principalmente de la parálisis capilar de que he tratado y de absorción biliar. Esta absorción biliar se vé patentemente en el período amarillo, en la convalecencia y, mejor, en el cadaver, cuando las manchas violáceas son reemplazadas por amarillas.

Creo yo que un exceso de bilis es retenido en el torrente circulatorio y que, tanto como la congestión hepática, esta retención biliar es una de las principales causas de las hemorragias pasivas del estómago é intestinos que presenta más de la mitad de estos enfermos. Durante el período congestivo (3 días, como tengo dicho), casi siempre he conseguido prevenir y hasta suprimir estas hemorragias, haciendo expulsar la mayor cantidad posible de bilis. Con este sistema apenas si se nota ligera subicteria en el convaleciente. Ictericia y hemorragias son, pues, en mi concepto y entre otras causas, provenientes de retención de un exceso de bilis en la sangre. Estas causas son: la congestión arriba mencionada del hígado;

discracia por acción de las toxinas sobre los glóbulos rojos, y degeneración del hígado y los vasos sanguíneos.

Lo que me he propuesto en el párrafo anterior es simplemente consignar *aquí* que la *fiebre amarilla* no consta *más* que del *primer período* llamado tambien *periodo inicial* ó *congestivo* y hacer *hincapié* sobre la corta y fija duración de esta enfermedad; pero no tengo la menor pretensión de haber trazado un cuadro sintomático, pues esto está fuera de los límites de este trabajo. Por lo demás, la fiebre excepcionalmente virulenta que reina en Cúcuta se presenta á veces al observador de distinta manera, en medio de un cortejo tan singular, tan exótico, que un hábil clínico podría en su presencia quedarse perplejo al principio. Allí se vé, por ejemplo, la poliuria por la anuria; un violento y prolongado cólico intestinal acompañado de fiebre, por todo síntoma, etc;.

Las toxinas del agente amarillo y los productos de desintegración no eliminados parecen obrar por intermedio de la sangre, paralizando los vaso-dilatadores, porque habitualmente la función cutánea tiende á suprimirse por sí sola en el febricitante amarillo abandonado á sí mismo: la piel se mantiene seca, cualquiera que sea la temperatura. Dicha parálisis capilar se manifiesta por manchas violáceas de formas distintas, mal limitadas en un fondo color amarillo muy pálido: manchas violáceas que agregadas á la contracción espasmódica de algunos músculos de la cara dan al febricitanfe amarillo esa máscara tan singular de embriagado que se mofa de cuanto le rodea. Signo importantísimo es éste, que conviene retener para facilitar el diagnóstico, porque habitualmente al principio no hay síntoma que diferencie esta fiebre del paludismo, de la nefritis aguda, del embarazo gástrico febril, de la viruela. etc;. Esta perturbación vaso-motora se observa desde el primer día en el tronco y la cara; pero es más visible en ésta. Y esa perturbación que se refleja

así al exterior debe también producirse interiormente y contribuír con la absorción biliar,—causa también á mi parecer, como he dicho, de las manchas violáceas de la piel, con las congestiones viscerales y la intoxicación sanguínea, á entrabar las funciones hematopoiéticas, ya bien comprometidas por dicha intoxicación. El sistema nervioso, mal alimentado por una sangre viciada y empobrecida por una desintegración orgánica excesiva (hasta 6% y más de albúmina), es por consiguiente influenciado por las toxinas y los productos oxidados de que dicha sangre no ha podido ser depurada. La retención de estos productos constituye la auto-infección. Nuestro deber es, pues, depurar el organismo por cuantos medios estén á nuestro alcance.

El clínico debe prestar escrupulosa atención á los más insignificantes fenómenos que puedan presentarse durante el período inicial, y especialmente á las congestiones viscerales, las del hígado y el riñón sobre todo, por ser estos órganos los filtros más esenciales á la economía, para depurarla de las tomainas y los productos de oxidación; pero estas congestiones viscerales no autorizan para afirmar que estos órganos son lugares de elección del supuesto microbio amarillo, porque por idéntica razón el hígado sufriría el mismo grado de congestión que los riñones, lo cual no he observado sino cuando el paludismo complica esta fiebre. Ahora bien, la moderada congestión que sufre el hígado es á lo más, en la mayoría de los casos—y en esta apreciación siento discrepar de la opinión general—la misma que experimenta en cualquiera otra pirexia.

Salvo complicaciones—que son raras, excepto la del paludismo, que se presenta como enfermedad intercurrente,—el febricitante amarillo muere casi siempre por el riñón, y al decir que muere por el riñón también he querido decir que muere á consecuencia de la intoxicación

sanguínea. Esta intoxicación es doble y tiene por causas la dificultad ó la imposibilidad de eliminación de los productos oxidados de que he hablado, más el envenenamiento microbiano. No se puede pues, afirmar con propiedad que el mayor número de defunciones tiene lugar exclusivamente por uremia. Impermeable el riñón, en los casos graves y mal tratados el individuo muere, es verdad, por uremia y en medio de los síntomas urémicos; pero, por una parte, la acción de las toxinas microbianas es otro elemento importante que puede por sí solo producir la muerte, como sucede con toda enfermedad microbiana, y por otra parte y á consecuencia de estas mismas causas,—ya obren separadamente, ya combinadas,—no son raros los casos desgraciados en que por descuido el paciente muere solamente por algidez.

El médico tiene casi siempre en su mano, si nó siempre, impedir que se efectúe la impermeabilidad renal que me ocupa, pues la anuria no es sino la expresión de un proceso congestivo del riñón en último grado, proceso cuya intensidad es posible moderar, para impedir que se produzca dicha impermeabilidad. En los casos de intensidad media la anuria no se observa entre los síntomas. Después que centenares de casos me han traído esta convicción, proveniente de que mis enfermos no lo han presentado, no vacilo en afirmar que, á mi juicio, la anuria es únicamente un epifenómeno en los casos graves, especialmente en los que han estado mal atendidos.

Los médicos de Cúcuta y los de las poblaciones frías y templadas circunvecinas han notado que es mayor la mortalidad cuando durante la incubación los contagiados se trasladan del foco amarillo á un lugar de clima frío ó siquiera templado. Este aumento de defunciones puede explicarse por acción del frío sobre los capilares cutáneos; mejor dicho, sobre la circulación general, si ello es que este aumento de defunciones no tiene por causa única, qui-

zá la ausencia de médico en la cabecera de los pacientes, ó la de recursos de todo género, ó la sobrecarga por fatiga muscular al trasladarse dicho paciente á pie ó á caballo al nuevo y frío domicilio.

La temperatura fría obra sobre la superficie cutánea, produciendo la vaso-constricción de sus capilares y, en compensación, estimulando por lo menos las congestiones viscerales. Por consiguiente se establece un desequilibrio circulatorio, perjudicial bajo los cuatro puntos de vista siguientes:

1.º Porque el ambiente frío disminuye, en proporción á su intensidad, la importante función de la superficie cutánea, función que tiene que ser compensada por los otros emontorios, ya congestionados por otras causas;

2º Porque las congestiones hepáticas y renal, que un estado febril cualquiera es por sí solo capaz de producir, aumentan por efecto del frío, con detrimento para la economía, que más dificilmente puede entonces defenderse de las toxinas, no quedando enteramente libre otra vía que la pulmonar, insuficiente para la completa depuración de dicha economía: de aquí la agravación del enfermo;

3º Porque congestionados los órganos internos, los cambios orgánicos se cumplen más dificilmente, ó casi no pueden ejercerse en los distintos aparatos y órganos. He dicho más dificilmente, porque esos cambios están ya bastante comprometidos por el solo hecho de la intoxicación sanguínea. Por último—y ésta es una hipótesis.

4º Porque al producir la vaso-constricción capilar, el ambiente frío se opone al fagocitismo y secunda por consiguiente la acción de las tomainas.

En cuanto á la disminución atmosférica en las localidades frías de nuestras cordilleras, generalmente es tan

pequeña la diferencia de altitud, que la presión no merece tomarse en consideración, y conviene observar que en Cúcuta el simple cambio de casa suele ser peligroso.

Respecto á la mortalidad en los focos endémicos creo —á juzgar por la de Cúcuta—que es muy baja hoy.

Se dice generalmente que la duración de los casos felices de fiebre amarilla es de 5 días, cuando es de mediana intensidad, y de 7 en los casos graves. El primer período,—período inicial que he llamado congestivo—tiene generalmente tres días de duración, en los casos de mediana intensidad, al cabo de cuyo tiempo todos ó por lo menos la mayor parte de los síntomas han desaparecido; los que quedan tienen poca significación y se han modificado á contentamiento de paciente y médico: la temperatura, por ejemplo es normal á veces; inferior á la normal en ocasiones, y casi siempre apenas superior (38° á lo más). Cuando en la mañana del 4º día todo síntoma ha desaparecido ó casi, y la temperatura es normal, ó inferior á 37°, natural es convenir en que el proceso ha concluído: pero cuando esto no acontece, como sucede en los casos graves, cuando en la mañana de ese 4º día los síntomas presentan regular intensidad y la temperatura es de 38° ó poco más, es de suponer que el proceso habrá de prolongarse algo más. Paso en silencio, para la claridad de mi exposición, los casos graves en que hay algidez en discordancia con el número de pulsaciones y con la intensidad de dichos síntomas. En este segundo caso la temperatura empezará á bajar ese mismo día 4º, según regla, y el paciente podría hasta sucumbir al siguiente día por enfriamiento, si un tratamiento adecuado no interviniera oportunamente. En el primer caso la temperatura, si estaba baja vuelve á ascender á la normal al 5º día; en el segundo caso, al 7º día. Pero esto en manera alguna significa que la fiebre amarilla tiene seguramente esa duración. Dicho proceso ha terminado al 3er. día en el primer caso, y al 5º día en el

segundo caso. La temperatura continúa descendiendo desde el 4º día, en los casos de regular intensidad, y desde el 6º día en los graves; pero nó por evclución de un proceso que ya no se revela por síntoma alguno y que debiera darse por terminado (como que ha terminado por lisis), sino, en primer lugar, por desintegración general, y en segundo lugar, por fatiga del sistema nervioso, cuyos elementos más íntimos han sufrido directamente la acción de las tomainas. Tan cierto es esto, que al 3er. día en los casos medianos, y al 5º en los graves, la tasa de albúmina ha alcanzado su máximun. Lo que ha quedado pues, desde el 4º ó el 6º día es un organismo profundamente quebrantado que se toma 48 horas para regular sus funciones, al fin de cuyo tiempo la convalescencia empieza francamente; pero nada nos dice que en esas 48 horas hay un estado patológico. En sentido inverso, en la fiebre tifoidea pasa á veces que, terminado el proceso, á los 21 días por ejemplo, la temperatura asciende medio grado próximamente. Esa pequeña elevación térmica—que aventuro explicar suponiendo una costumbre de sobreexcitación de los centros termógenos—no es reveladora de proceso alguno y cede con ejercicio moderado al aire libre y baños fríos cortos, como si se tratara de un convaleciente.

El trabajo muscular llevado hasta la fatiga,—el producido, por ejemplo, por el ejercicio á pie ó á caballo y durante la incubación—es por sí solo motivo de que esta fiebre revista carácter maligno y así como sucede con la acción del frío, con el trabajo intelectual excesivo, la vigilia prolongada, los excesos venéreos y, con la sobrecarga por agotamiento nervioso.

En resumen, auto infección por incompleta eliminación de los productos excrementicios de la economía, envenenamiento de la sangre por las toxinas microbianas y acción de éstas sobre los centros nerviosos y conges-

tiones viscerales constituyen, en mi opinión, el mecanismo íntimo de la enfermedad que me ocupa.

M. S. ALGANDONA.

Panamá, 15 de Diciembre de 1904.

SOME OBSERVATIONS

AS TO A SPECIAL REFLEX ACCIDENT AFTER CATARACT EXTRACTION, WITH HISTORY OF FOUR CASES ILLUSTRATING THIS CONDITION.

BY DR. P. DE OBARRIO.—PANAMA.

In the course of some detailed observations in two series of fifty cataract extractions each, my attention has been called to the fact of certain hyperæmic states of the conjunctiva. It has been of rather frequent occurrance to observe a slight irritation after extractions, but of no serious nature. This congestion is similar to that in healing wounds and in all cases it has subsided after the routine treatment of local applications either of heat or cold, according to the length of time after the operation. I lay stress on this matter, for it is my object to call the attention to the fact that it is not to this physiological reaction I am to refer, but to some persistent vaso-dilator disturbance of obstinate character appearing immediately after the surgical interference and existing for a more or

less indefinite period. This symptom may or may not be accompanied with pain, but as a rule there is no pain whatever.

The general course of such a case will, I think, demonstrate better my point.

A patient calls on you with a lenticular opacity of an advanced character justifying a surgical interference. The functional examination proves favorable, that is to say, the motility, tension, conjunctival and lachrymal apparatus, iris reaction, light perception, projection, etc., are found to be normal. There is no previous history of traumatism or otherwise which may lead to the supposition of deep seated trouble, which may have been overlooked; in other words, we are dealing with a simple, mature, senile cataract of normal character, demanding interference, and such interference granted.

You proceed in the usual accepted manner of extraction, there is nothing abnormal during the operation, and you are led to foretell a satisfactory result. There being no indication to disturb the patient, you do not interfere with the bandage till the third day, say, when you remove it. On examination you are immediately struck with the fact that there is a marked hyperæmia of the conjunctiva of an alarming nature. You naturally examine the corneal wound as you are led to believe that such a conjunctival reaction would be co-existant with a corneal infection. You are nevertheless pleasantly disappointed on finding there is no such condition. The corneal wound is normal, there is no iritic hernia nor entaglement of same in the corneal wound, the anterior chamber is formed, the pupil is central, black and circular, the sight good, no secretion. Taking all these data into consideration, you prescribe, say, the more or less continuous application of cold compresses of a solution of boric acid, to be continued for 24 or 48 hours, but you notice no beneficial

effect. You make then use of heat, either in the dry form or by means of moist antiseptic solution of a mild character, such as the boric acid already mentioned. To this you give a fair trial during 48 to 72 hours or more, but you are again disappointed for there is no betterment justifying its continuation. To make my story short, you make use of all other means in current practice and generally accepted in cases of localized congestions, but to no avail. There is then but one point to be taken into consideration, and that is as to the existence of some pathological condition elsewhere that, by reflex action, might influence in an indirect manner the vaso-motor center of the conjunctival vessels, causing these marked hyperæmic conditions.

You would probably start by draining the intestinal canal freely with a saline purgative, that is, if you have not done so from the very start, which I consider a good practice, and you would maintain it working with regularity. This however proves unsatisfactory. You make then a careful examination as to the existence of an undetected pathological condition in the ear or the nose or throat, or the larynx, or the cranial cavities, or the teeth, and you find that none of these are in any way affected to justify such state of affairs, with perhaps the exception of the teeth. You find that there are one or several of them carious, that the first or second bicuspid are invariably so, that probably there is nothing left of them but the roots, that the gums in their immediate vicinity are slightly inflamed, that there is some pus secretion on pressure, that such roots have laid in place for a long time, that there is probably a small abscess at the apex, in a word, a pathological condition of an irritative character that might well explain the aforesaid hyperæmic state of the ocular conjunctiva. You propose the extraction of these teeth, which is eagerly accepted by the patient, and in 48 to 72 hours all symptoms disappear, the cornea heals in a normal

way and there is no ill effect to complain of, leaving a healthy aphakic eye with probably as good a result as you would have obtained under a normal process of repair.

A brief report of my cases will illustrate these points.

Mrs. L. C. H., 65 years of age, consulted me as to rapidly failing sight of the right eye. On examination I found a senile cataract in a mature condition. The functional examination proved normal, and I proposed extraction. The operation offered nothing noteworthy. The patient suffered quite a nervous shock and in the evening of the same day she had nausea and vomiting, which however subsided immediately. Next day the bandage was removed and the eye was found to be doing well. The anterior chamber was formed, the iris and pupil were normal, there was a slight reaction of the conjunctiva. The bandage was replaced, and there being no indication, it was not removed till the fifth day. It was found then that there was no secretion, no pain, no photophobia, no synechia, but a very marked hyperæmia of the whole conjunctival surface. The aplication of cold compresses was immediately begun and kept for five days, particular attention being paid to the functions of the intestines, prescribing as well a light diet. At the end of the fifth day, or ten days after the operation, there was no improvement whatever. The patient did not complain, her vision was fairly good, she slept well and digested well, but there was this very marked homogeneous dull red congestion of the conjunctiva. I directed the application of hot fomentations that were continued again for five days, but there was no improvement. It was at this period that I made a thorough examination as before explained, and decided to have extracted two portions of carious teeth, the first and second bicuspids of the right side. In 24 hours there was a marked change for the better, and in three days all was well.

The second case is that of a man, R. G., 57 years of age, laborer by occupation, in good state of health. He had cataracts in both eyes. The left one being in better condition to be operated on, I proposed to do so. The operation went without any abnormal incident, and everything pointed to a rapid and normal recovery. The patient complaining of some pain, I removed the bandage after 24 hours. There was some congestion of the conjunctival vessels, which became more marked in the succeeding days. The routine treatment was instituted, but to no effect. The eighth day after the operation, I proceeded to examine the teeth and found the second bicuspid and first molar of the left superior maxilla in very bad condition. The extraction of these took place the next day and on the fifteenth day after the operation I discharged the patient cured with 15 / 20 of vision and able to read with plus 13 diopters.

The third case is that of Mrs. C. T., a woman of the middle classes, in good health. Her left eye had been enucleated about 10 years ago and as far as I could learn it was a painful atrophic eye as a consequence of an irido-cyclitis of a severe character. Her right eye had suffered from plastic iritis as could be detected by a complete posterior adherence of the iris to the lens. There was a false membrane covering the entire pupillary area. With all this, the tension was good, the light perception and light projection were normal. Being her only eye, she was very anxious about the result of the operation, which I naturally prognosticated with some reserve. She took all chances and was willing to submit to the operation. The 15th. of March last I, proceeded as follows; after the corneal incision I performed a large superior iridectomy. I then found that the false membrane extended to half way between the pupillary border and the base of the iris, parallel with the latter, as if a circular piece of membrane had been inserted between the iris

and lens, adherent principally to the iris. With the point of the cystotome I hooked the membrane from behind and with gentle traction I succeeded in extricating it in its entirety. As there were some portions of the iris adherent to the lens, I extracted the lens with the loop. The reaction was rather violent with a good deal of conjunctival chemosis, but very little pain. The chemosis subsided after a few days. The patient suffered then from periodical nocturnal orbital and ocular pains which subsided after the use of a saline purgative and the sulphate of quinine in 20 grain doses. The patient then entered in the period of marked hyperæmia of the conjunctiva that characterized the previous cases, and with no tendency to recover. The second bicuspid and first molar of the right superior maxilla were found to have been carious a long period and at times painful with some swelling of that side of the face. After their extraction, the patient had a non-interrupted cure.

The fourth and last case is that of P. L., a merchant, 33 years old. His right eye had been operated for cataract two years previous when he consulted me as to the condition of his left eye which had a healthy non-complicated senile cataract with normal functions. There was no incident either during or after the extraction, but on the third day I noticed that dull red congested conjuctiva with no other simptom, which brought to my mind the previous cases that had been observed in my practice at long intervals.

There was, as in the other cases, an old carious tooth and a root of the first bicuspid of the *left* superior maxilla. Questioning the patient as to the behavior of his right eye when operated, he told me that it had healed with no accident whatever. All the teeth in the *right* upper maxilla were normal; this semed to me a very intructive case, as it conclusively proved that the teeth must be affected on the side in which the operation is performed,

so as to have effect. This was undoubtedly the case with my other patients. After the extraction of the bad teeth, the patient recovered with very good results.

I may say that these cases are not very frequent, but that they are nevertheless encountered in practice in the tropical countries, and one must be prepared to meet emergencies, being never backward in clearing the field by doing away with the exciting cause.

I. am led to conclude then:

1st. That in all persistent hyperæmic conditions of the conjunctiva after cataract extraction with no other apparent symptoms, the teeth of the superior maxilla of the same side may be the exciting cause, acting through the middle branch of the trigeminus and Gasserian ganglion, thus bringing about the aforesaid condition

2nd. That as experience nas taught us, the treatment of this condition is the extraction of the decayed teeth or imbedded roots, in other words, removing the reflex cause of the inflammation.

I therefore recommend this practice in all protracted vaso-dilator disturbances after surgical interference in non-infected eyes, as a logical procedure worthy of being taken into consideration and backed with the experience of these few but well defined cases.

TWO CASES

OF HEREDITARY CONTRACTURE OF THE FEET WITH OPERATION.

BY JOHN LINCOLN PORTER, M. D., CHICAGO, ILL.

Although the influence of heredity in the etiology of Dupuytren's contraction of the palmar fascia has been recognized as a factor in many instances, the occurrence of an analogous condition in the feet with distinct hereditary history seems to have been observed so seldom as to make these cases of interest. In fact, in the short time at my disposal I have found nothing on the subject in the literature.

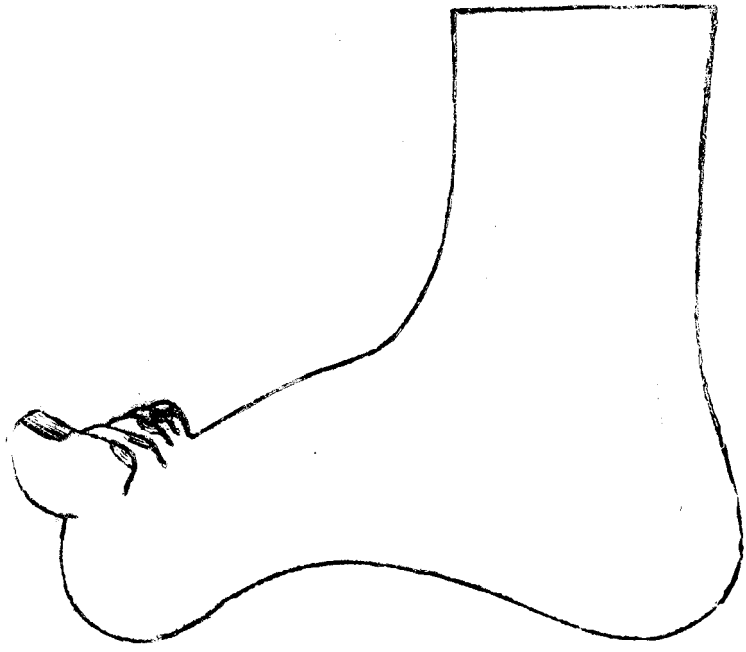
In 1885 Shaffer (1) described under the title, "Non-Deforming Club-Foot," a very similar condition, but his cases differ from mine in several paticulars, and so far as the title, "Non-deforming", is concerned, it would certainly be a misnomer for my cases, as the deformity was

(I) N. Y. Med. Record, May 23, 1885.

marked in both. Shaffer does not mention the factor of heredity in the etiology of any of his cases. Whitman describes the condition more nearly under the title of "Contracted Foot," but neither does he seem to have noticed any hereditary influence in his cases. The condition is also described very closely by other writers under the names talipes arcuatus and talipes plantaris, but, perhaps because the patients were younger, the deformity in all cases reported seemed to have been less than in mine. To be sure, the disability is more prominent than, and out of proportion to, the deformity, but I believe every case that is allowed to go on to middle life without treatment will result in as much distortion as the ordinary paralytic club–foot.

The condition in an advanced case is as follows: The antero–posterior arch of the foot is increased, producing a hollow foot, and the convexity of the dorsum is correspondingly increased; the foot turns inward, usually in a position of slight varus, although in some cases the foot is everted as in flat–foot. The toes are flexed—like a hammer toe, and when the patient stands the ends of the toes come firmly down on the ground. The weight is borne on the heels and heads of the metatarsal bones, and the patient walks stiffly with an inelastic, jarring gait, as in flat–foot. Dorsiflexion at the ankle is lost, and usually the motion in pronation and supination is very slight. The patient complains of pain in the arch of the foot, often extending up into the calf; and also of pain in the transverse arch, which is usually obliterated. The pain grows worse, involving the whole foot and leg upon long standing or walking, and some of the cases are virtually crippled from the pain and disability, and unable to walk but a short distance without rest.

The pathology can hardly be discussed as so little is known.



The Contracted Foot

In May, 1903, Mrs. E. F. came under observation, with the following history: Aged 30; housewife; had for many years weak feet and painful cramping pains in the feet upon walking. This had grown gradually worse until her first child was born, when it grew worse rapidly. Has had two children in past four years, and during that time her feet had become so bad that she could scarcely get about to do her housework. Had to sit down and rest and change her shoes several times a day, and did not pretend to walk outside of the house. Could not walk at all without shoes.

Family History: Her mother is living and well, except for a facial paralysis, which she has had since childhood. Father dead; cause of death not ascertained. He had Dupuytren's contraction of palmar fascia, and some trouble with his feet, which practically crippled him, and for which he had some of his toes amputated. The patient believes her father's trouble was identical with hers. She has a sister, older, who has the same trouble, and a brother, younger, who has trouble with his feet, but not as bad. A still older half-sister by another father has no trouble whatever.

Condition: Marked increase in arch of both feet; heads of metatarsals very prominent on plantar surface, and covered with calluses. Toes dorsiflexed at first phalanx, and plantar flexed at the ends, and first joints covered with calluses. Feet cannot be dorsiflexed beyond a right angle, and only to that degree by great force. Cannot take two steps without shoes, and inner sole of shoes had two rows of deep indentations where heads of metatarsals and ends of toes have made pressure. The plantar fascia feels hard, especially the inner half. Tendo-Achilles prominent; feet slightly inverted in walking and the ankles tend to turn out.

Operation: May, 1903. Tenotomy of flexor longus pollicis and flexor communis digitorum at the inner mal-

leolus by open incision, and of the short flexors at the roots of the toes. Section of the plantar fascia subcutaneously, and of all tense tissues that could be felt through the skin. Then the foot was forcibly flatened out and softened as much as possible by manipulation and the toes extended. Then the tendo-Achilles was divided subcutaneously and the feet dorsiflexed and put up in plaster. The patient was advised to begin standig on her feet as soon as possible, which she did in about ten days, and in spite of the section of the tendo-Achilles she was able to walk in the plaster casts in about two weeks. The casts were removed in four weeks, and the patient went home wearing shoes with the toes strapped down to an insole. She has been very greatly improved and able to walk good distances, and do her work as housewife on a farm. She was instructed to keep all the tendons of the feet stretched by exercises and massage, for fear of a relapse. Lately she has written me complaining of some pain in the feet, particularly in the dorsum of one foot.

In June last (1904) her older sister came to me for relief for the same condition. Her disability was even greater than her sister's, and this was made still worse by mutilation, she having had the second and third toes of one foot and the middle toe of the foot amputated some three years ago. This operation was done under the delusion that the trouble lay in the cramping of the toes, and the patient said that since the toes were amputated the feet had grown more rapidly worse. When she appeared for operation she hobbled around, and could scarcely stand without shoes on.

A similar operation to the one described above was done, except all the flexor tendons were divided at the roots of the toes instead of going after the long flexors behind the malleoli. Even after section of all the tendons

and fasciae, great force was required to soften up the feet and extend the toes, and one toe was so resistant it had to be attacked three times, and finally the scar tissue about it resulting from the amputations had to be divided freely as well as the skin on the plantar surface. Recovery took longer than in the first case, but the patient is now going about her occupation very much improved, and very confortable.

The brother, younger than either of the cases reported above, has typical weak feet, though the arches are not flattened. Dr. Ridlon fitted a foot plate for one foot two years ago, and he was very comfortable until the past summer, when he began to complain of recurring weakness and beginning trouble in the other foot when I advised him to have plates made for both feet. After ten days' rest in plaster-of-Paris for the worse foot, a pair of plates with flanges to prevent pronation were fitted, and he is now on his feet all day, with perfect comfort.

The points of interest in these cases are:

First, a distinct history of heredity, transmitted from father to children, and emphasized by the fact that a half-sister by another father escaped. Second, the speculation as to what relation exists, if any, between the condition seen in the two sisters and that in the younger brother. Is the latter, which so closely resembled weak feet, simply an earlier manifestation of the same contraction tendency found in the sisters, and might their deformity have been prevented by proper early support?

These cases have been reported here chiefly to elicit some discussion from other members on these points.

SOME OBSERVATIONS

ON DEMENTIA PRAECOX (ADOLESCENT INSANITY.) BY DANIEL R. BROWER, A. M., M. D., LL. D., CHICAGO.—PROFESSOR OF NERVOUS AND MENTAL DISEASES. RUSH MEDICAL COLLEGE.

The title dementia præcox, sanctioned by the authority of the great master in psychiatry, Kraeplin, is objectionable because it stamps the disease in the minds of many with incurability, whereas those who have had much to do with this form of insanity know that treatment commenced early and followed earnestly results in a fair proportion of recoveries. The term adolescent insanity is better. It carries with it no bad prognosis and fixes it as the insanity of development, or rather of its disorders—a group of morbid mental symptoms ocurring at about the period of sexual development. It should be noted, however, that not every case of mental derangement occurring between the thirteenth and the twenty-fifth years is one of adolescent insanity. While this period

has its own types, it is also a stage of life in which any mental weakness may reveal itself. Many cases of recurrent insanity make their appearance about this time. Hysterical derangement may date from this period, and under conditions of special strain confusional psychoses may occur. Congenital paretic dementia often has its first manifestation about the age of puberty, so in short any of the clinical types except senile dementia may appear during these ten or fifteen years. Adolescent insanity is a special form of alienation under the strain of sexual development, characterized by explosive emotional states, by intellectual anomalies, by perceptive disturbances, and by excited, stuporous or melancholic manifestations.

In its mild form the mental disturbance is a gross exaggeration of natural peculiarities of youth, as egotism, boastfulness, cruelty, pugnacity, and sexual depravity, with inability to meet the ordinary requirements of school and home.

In more severe cases there is a maniacal manifestation, exaltation, ideas of self-importance, megalomania, boisterous talking, quarrelsome and destructive outbursts, obscene conduct, excessive masturbation.

In the melancholic type there are delusions of persecution, suspicion, gloomy thoughts, loss of energy and interest, suicidal tendency, masturbation, amenorrhea.

The stuporous cases are usually the sequelae of one or the other of the types above mentioned, or may alternate with them, and be marked by the presence of catalepsy, and if these several forms do not improve, they travel with more or less rapidity to dementia.

ETIOLOGY.

The nisus of puberty develops the inherent weakness of family history. This heredity is not necessary insanity for the nervous disorders on transmission

may undergo transformation and hysteria, epilepsy and megrim in the parents may be adolescent insanity in the child. Alchohol, syphilis and tuberculosis are the potent factors in modern society developing neurotic tendency in children. Their parents, having ancestral weakness, are poor trainers for the children. A badly regulated household—immoral on the part of parents, vicious environment, poverty, with its poor food, bad ventilation and unhygienic living, generally all aid immensely to the inherent defects of the child. The school life is often an important aid in the development of the psychosis.

We need inspection of the schools by medical experts, who can, by the study of the physical signs of mental dullness, impaired nutrition, and defects in development, determine what care and treatment each child should have. The great defect of our school system is herding together a large number of children, some of whom are dull and backward, thin, pale and delicate, and are unable, by physical and mental conditions, to reach the standard of normal children, but are forced to it, or they fail, and the discouragement intensifies their deficiencies. Attention should be given in every school to the physical development of the pupil, and between each literary exercise for the development of the intellectual and emotional and perceptive territories gymnastics should be given for the development of the motor territories, so that at the end the man shall have a well rounded mental and physical status.

These neurotic children should have special provision made for them in school, where more attention can be given to each child's peculiarities, and where manual training will be a special feature.

Cases of adolescent insanity are often excessive masturbators, and this vile practice is often regarded as the cause of the alienation, but it is indeed more frequently a

sympton, and as the mental condition improves the practice will be lessened and abandoned. Amenorrhea, so frequently present in the female cases, is too frequently regarded as an etiologic factor, whereas it is a symptom of the depressed condition of the general nutrition, and as the patient improves in this regard, the menses return.

This psychosis has a prodromal period. It may be six to nine months in duration, during which the child, formerly much interested and successful in school work, becomes careless, indifferent and neglectful; from having been useful, obedient and affectionate at home, becomes indifferent, disobedient, unreasonable and impudent; from having been kind and helpful to the other members of the household, becomes cross, cruel and uncompanionable, forsaking the companionship of his playmates for solitude. There becomes manifest a silly laugh, without any evidence of good humor or joyous impulse; emotional indifference; nothing touches them; nothing moves them. There develops psycho-motor retardation. Slow psychical reaction; several seconds often necessary before simple questions can be answered, and then only after several repetitions.

The symptoms become more pronounced. As striking characteristics there are carelessness, lack of judgment, egotism, quarrelsomeness, nauseous sentimentality, excess in alcohol, tobacco, venery, offences against social proprieties, sudden impulses occurring without warning, motiveless, and often denied, marked emotional infirmity with capacity to remember and understand. Movements expressionless and yet made without impairment. No disorientation; occasionally decided suicidal tendencies, and an attempt at self-destruction may be the first thing to call attention to their mental derangement. The morbid acts may take other directions; assaults, arson and even homicide may occur.

The patient often sleeps poorly, has a poor appetite, complains of headache, suffers often from constipation, tires easily, has usually a very low hemoglobin record, and a deficiency of red blood corpuscles.

The reflexes, both superficial and deep, are usually exaggerated, and Dunton (1) has called attention to a sign that should be emphasized, that is, mechanical irritability of the facial nerve.

Some of the cases manifest paranoiac symptoms, run a rapid course, and terminate in dementia. These begin with restlessness, headache, emotional depression, passing rapidly into a delusional state, with ideas of persecution, and sooner or later megalomaniac ideas.

Another type is the catatonic, or insanity of muscular tension. This form begins usually with a melancholic stage, with preliminary neurasthenic symptoms–headache, insomnia, etc., passing gradually into a more or less acutely depressed state, with sometimes hallucinations and delusions of a depressing or terrifying nature. The patient talks constantly or by spells, without regard to sense, a continuous flow of words ("verbigeration"). Sooner or later muscular stiffness or tension. varying in degree from merely a slight rigidity, making the movements stiff and somewhat awkward, to a complete waxy flexibility, in which the patient is like a jointed lay figure, the limbs retaining any position in which they are placed, until gradually, by force of gravity, they become relaxed.

DIAGNOSIS.

The diagnosis of adolescent insanity must be made from neurasthenia. The cases show the tired feeling, the exaggerated reflexes, and the tremor of neurasthenia, but the differentiation can usually be made by a careful

(1) American Journal Med. Sciences,CXXIII, p. 109.

study of the mental condition. The slight emotional disturbance usual; the slow psychical reaction; the negativism, stereoptopy and impulsiveness are not found in neurasthenia. The condition of orientation assists in the differentation from acute confusional insanity, and the physical finding from general paresis.

PREVENTION.

The children with a psycho-neurotic ancestry demand the most careful attention to diet, exercise, education and environment, in order to enable them to withstand the stress of puberty. If each of these factors had been duly considered by the distinguished physician and Superintendent of the London County Asylum, Doctor Jones could not have written of this disease, that it is "now so common that it may almost be described as the scourge of our asylums, for it attacks prematurely our most promising youth; it is practically incurable, and will fill our asylums of the future with the hopelessly insane". (2)

TREATMENT.

The cases should be recognized early. Alteration in the mental condition at the nisus of puberty should be more seriously considered. School should be stopped; the Weir Mitchell rest cure meets the early indication of the majority of cases; insolation, rest, a fatty and nitrogenous diet, eliminants, tonics, massage, general faradization, and baths. After the underlying causative and pathological factors have been thus removed or improved, then we open our treatment with change of residence and climate, which may be desirable.

There is much in the investigations that have been made into the pathology of adolescent insanity by Dunton, Labouchier, Bredier, and others to lead one to suppose that the disease is caused by an auto-intoxication,

(2) Amer. Jour. of Insanity, April, 1904, p. 592.

probably emanating from the sexual organs, and this makes manifest the necessity for elimination by bowels, skin and kidneys, and for maintaining the highest possible standard of general nutrition by alteratives a nd tonics.

One case I am now watching with much interest seems to have been cured by sending him to the country and getting him interested in raising pigeons for the city market. He came to me about four years ago, with a neurotic family history, a personal history of the ordinary diseases of childhood, and with having been very successful in his school work, and much interested in the sports of his companions. He became shy, retiring and seclusive; became careless and indifferent in his school work; quarrelsome with the other members of his family. He was now sixteen years old. I immediately stopped his school, gave him the rest cure, treated the anemia with Blaud's mass, the constipation with aloetics, the insomnia with small doses of chloralamid, and gave him daily massage, electricity and cold wet packs, and after a time he was eating well, sleeping well, the constipation was relieved, the hemoglobin record up to normal, and his weight reestablished. Then he went to a relative in the country and there began pigeon experience, and now, after four years, I find no evidence of the degenerative process that was rapidly pushing him to dementia.

The difficulty in all such cases is to find some congenial occupation that is not too strenuous, away from the excitement and noise of a city.