

grow more rapidly than do the simple forms. Notwithstanding its slow rate of growth, the chondroma may attain a very large size, even that of a man's head.

In the course of development of a chondroma, the soft parts are crowded aside; tendons may make deep indentations in the tumor, and even run through it in canals made by the bridging over of such indentations. In the chondromata of the ends of the bones the articular cartilages play no part in the development of the tumor, but are overgrown and covered by the new growth.

Retrograde metamorphoses are especially characteristic of the growth and the development of the chondroma; the comparatively small blood supply of the tumor and the difficulty of nourishing the circumscribed masses of newly formed cartilage adequately explain this. Calcification is frequent; it may occur in the form of scattered islets of calcareous material, or of hard lamellae, the latter being easily mistaken for bone. In the process of calcification, calcareous material is deposited first in the cell capsule, then in the cells, and finally in the intercellular substance. Ossification takes place about as frequently as calcification, and occurs not only in chondromata of bones, but also in those of the soft parts. The process is characterized by the formation of spicules and septa of bone which intervene between groups of cartilage cells. Very often there takes place the formation of isolated osseous plates, or of a spongy bone with well-marked Haversian canals. In chondromata which develop from bone, the new growth may contain remains of the old bone enclosed in the newly formed cartilaginous tissue.

Myxomatous softening, with associated cyst formation, is frequent in chondromata. If this metamorphosis takes place throughout the whole extent of the tumor, there are formed, between the trabeculae of the stroma, cysts of varying size, with yellow or gray contents. The process is characterized by a fatty degeneration of the cartilage cells, which thereby become filled with fat drops and are changed into granular corpuscles. The intercellular substance undergoes softening, with the formation of a mucoid substance, and from the blood-vessels take place hemorrhages which give to the softened mass a dark-brown color. In some rare cases, the skin over a chondroma becomes ulcerated, and a fistulous opening develops into one of these cysts of softening.

The teratomata, or mixed tumors, especially those of the sacrum, frequently contain cartilage in association with other tissues; these tumors constitute a distinct group.

The osteo-chondroma, described by Virchow, is a form of complex chondroma in which ossification takes place chiefly by the deposition of lime salts in the intercellular substance. The cartilage cells of this tumor are similar to those which occur in the course of the ossification of the long bones; the cells generally possess no capsule, and are distinguished from connective-tissue cells by their shape. This form of chondroma is most often found upon the long bones, where it produces very large masses. The growth is usually surrounded by a bony capsule formed from the periosteum. Softening in this variety is not common.

As to recurrence of chondromata after removal, it may be said of this class of tumors in general that they do not tend to return. This is true especially of chondromata of the soft parts, and of those of the phalanges; it is not the case with chondromata of certain other regions, notably the bones of the pelvis. Virchow reports one instance in which the tumor was removed seven times at intervals of from six months to two years.

ETIOLOGY.—The beginning of the growth of a chondroma is often traceable to a very early period of life; in some instances, especially those in which the growth arises from bone, the tumor is congenital. Chondromata of the soft parts usually develop later in life.

Trauma is often alleged to be a cause for the occurrence of a chondroma either in the soft parts or in bone. The form of injury most frequently regarded as standing in a causal relation to the development of chondromata is fracture of a long bone; tumor formation in such a

case may be looked upon as due to some irregularity in the reparative process which follows the injury.

For the occurrence of chondromata of the bones, irregularity of development is the probably correct explanation. In favor of this point of view may be considered the fact of the multiple character of these tumors, and their appearance in that period of life in which the skeleton is growing most actively. Cohnheim's theory of the formation of tumors, which asserts that new growths arise from vestigial embryonic tissue, seems to find confirmation in the case of the chondroma. Virchow found that remains of embryonic cartilaginous tissue are often enclosed in the medulla of the long bones, and it is probable that such remains are the immediate antecedents of many chondromata of the bones. The cause of the persistence of this embryonic tissue may be a disturbance of blood supply, or an excessive growth of the primary cartilage. A form of chondroma which arises in the sphenoid-occipital sychondrosis is by some authorities believed to develop from surviving embryonic cells of the chorda dorsalis. Irregularity in the post-fetal development of bones, as in rachitis, is also held to stand in relation to the occurrence of chondromata; under these circumstances, islands of cartilage remain in the bone, from which tumor formation may proceed in childhood or later life.

For the occurrence of chondromata of the soft parts, misplaced embryonic cartilaginous elements are probably responsible. Thus, primary chondroma of the lungs may proceed from detached portions of the primary cartilage of the respiratory tract, and chondroma of the breast from that of the ribs. The chondromata of the thyroid gland and of the parotid gland may arise from the cartilage of the branchial clefts. The same is probably true of certain cartilaginous tumors of the skin. The simple chondromata of the testicle and of the ovary may arise from islands of cartilage detached from the primary cartilage of the notochord. The occurrence of the cartilage-containing mixed tumors in the various organs may rightly be referred either to a detaching of parts of an adjacent cartilaginous Anlage, or to a heteroplastic development of mesenchymal cells.

DIAGNOSIS.—A firm, hard tumor seated upon cartilage or upon bone should always suggest chondroma. In some instances, the early stages in the development of a chondroma may resemble an osteitis, or a periosteitis. Chondroma is differentiated from fibroma by its hardness except when the latter is calcified, and from other tumors, including osteoma, by its rough, uneven surface. The central chondromata of bones may often be recognized by the parchment-like feel of their bony capsules. The chondromata of the soft parts are usually easily to be diagnosed from their firm consistence, uneven surface, and slow growth. *George Burgess Magrath.*

CHONDRO-SARCOMA. See *Sarcoma.*

CHORDEE (Chorda venerea) manifests itself in more or less persistent erections, during which the penis is curved like a bow or bent at an angle. Near the centre of the concave side of the bow and at the interior of the angle, palpation reveals hardening of the tissues. This hardening may be circumscribed or diffuse. The patients compare their sensations during chordee to the feeling of a tense string or a red-hot wire drawn through the penis or urethra.

Chordee is due to cavernitis, either of the penis or of the urethra, or of both, in hyperacute gonorrhoea; it may also be produced by the use of excessively strong injections, by an injury to the urethral mucosa, by the use of a sharp-pointed syringe, or by the unskillful introduction of instruments, during the acute stage of urethritis. It may, furthermore, be due to infarction of urethral crypts and glands, with or without consequent peri-urethral or cavernous abscess. In some cases induration continues without either of these terminations for years, and may then become an impediment to copulation on account of deflection of the penis during erection.

In chordee the penis is bent in the direction of the infiltration that causes it, because the infiltrated part does not take part in the general turgescence of erection. The intense pain produced by such erections may drive the patient to desperate measures, such as placing the organ upon a hard surface and striking it a violent blow "to break the cord." Some patients have sought relief by coitus. The results of such violence may be urethral rupture, fatal hemorrhage, urinary extravasation, and consequent death from urinary infection, laceration of the corpora cavernosa, and gangrene of the penis. Even in those cases in which neither a stricture nor any one of the results just enumerated occurs, the part of the penis in front of the injury may thenceforward be cut off from sufficient blood supply to enable it to participate in erection.

TREATMENT.—In the acute stage, rest in bed under light covering, a low diet, purgatives, camphor or its monobromate, with or without opium, may be prescribed with advantage; locally, hot sitz-baths, hot or cold compresses—whichever the patient finds most soothing—and leeches to the perineum, are indicated. In hyperacute cases, the infiltrated tissues may be punctured with fine needles, as a last resort, if the other treatment does not suffice. If an abscess forms it must be opened early to prevent its breaking through into the urethra. In chronic cases, where the infiltration has become solid and gives but little or no pain during the deflected erection, galvanism may be used to stimulate absorption of the infiltrated material. If it is employed the negative pole should be applied to the infiltrated tissues and the positive to the opposite side of the penis. At first a low amperage should be used for several minutes, but afterward the séances should gradually be lengthened until they reach a term of from twenty to twenty-five minutes each. *Ferd. C. Valentine.*

CHORDOMA.—The term used by Ribbert to designate a small tumor found occasionally in the median line of the clivus, near the union of the sphenoid and occipital bones; a tumor to which Virchow had previously given the name of *eochondrosis physalifera sphenooecipitalis*. The growth, to the naked eye, has a colloid or gelatinous appearance, and is usually about the size of a small cherry. It arises out of the sphenoid-occipital sychondrosis, and either occupies the space between the bone and the dura mater which may not be perceptibly elevated, or it may break through the dura into the arachnoid and pia. In longitudinal sections of the clivus the tumor is found to lie in a small cavity which involves only the superficial portion of the bone or it may extend into the medullary portion. In young individuals whose sychondrosial cartilages are still present earlier stages of the tumor may be found. In these cases there is present beneath the dura, which is usually not elevated, a small round or flattened mass of tumor tissue lying in the cartilage from which it is sharply though irregularly outlined. No evidence of transition between the tissue of the new growth and that of the neighboring structures is ever observed.

The tissue of the tumor when examined in the fresh state is found to consist of large bladder-like cells resembling plant cells. These are easily isolated by teasing in normal salt solution. They contain numerous vacuoles of varying size which may so fill up the body of the cell that the protoplasm appears to be pushed in a narrow ring to the cell periphery. Few of the cells are free from vacuoles. The protoplasm is clear and contains fine shining granules. The small round nuclei appear bright and clear. The gelatinous portions of the growth break up in water. In hardened preparations the vacuoles appear still more prominent, but are oval or flattened rather than round. The protoplasm appears in less amount, but the small round nuclei are brought out very distinctly. These lie either at the edge of the vacuoles, or when the cells are seen from above they appear to be in the centre of the vacuole. Between the cells lies a homogeneous hyaline intercellular substance varying in amount in

different portions of the growth. No blood-vessels have been found.

Virchow regarded the growth as a chondroma developing from the remains of the sphenoid-occipital cartilage, the cells of the cartilage having undergone a peculiar bladder-like degeneration. But the character of the tissue as well as the relations of the tumor makes it very probable that it represents remains of the tissue of the chorda which have taken on proliferative activity. *Aldred Scott Warthin.*

CHOREA.—(Synonyms: Sydenham's Disease; St. Vitus' Dance; Danse de St. Guy, de St. With; Myotyrbie [Dartigues]; periodical jactitation [R. Watt]; Chorée, Veitstanz, Veitsdands, Vit-Táncz; Plasawicy scelotirbe; Corea; Folie musculaire [Bouillaud].)

The literature of chorea is extremely voluminous, and its history dates back to the middle ages, when it existed chiefly in its epidemic form. Hecker¹ and others detail the incidents of the various religious pilgrimages to the shrines of St. John and St. Vitus, and the imitative features of the outbreak of psychical excitement with convulsions and jactitations are of the greatest interest. In many respects this form of trouble, apart from its general character, differs but little from that in which attacks of hysterical chorea major are witnessed to-day.² Puccinatti and other writers have undertaken to fix the identity of sporadic and endemic chorea, and to some extent they have succeeded; but when we consider the probable pathology of the disease from the standpoint of modern investigation, it must be admitted that the psychical element is by no means an important one. During the last twenty-five or thirty years, thanks to Kirke, Ogle, Dickinson, Dowse, Jackson, Eisenlohr, and Elischer, the relations of the disease to affections of the heart, to embolism, and to rheumatism have been made very clear, and within a comparatively short space of time the organic variety known as post-hemiplegic chorea, or hemichorea, has been fully described by Mitchell, Charcot, Hoffman, Jackson, and others.

Chorea is a disease which manifests itself in an exceedingly irregular manner as to the parts affected, and the degree of violence of expression, and as to its association with or dependence upon other things. The affection is characterized by a peculiar disorderly and nearly constant recurrence of muscular contractions of an involuntary character, which are not (except in hysterical cases) at all rhythmic. It has been divided into *general chorea*, or *chorea major*, and *partial chorea*, or *chorea minor*, and the manner in which it is associated with other pathological conditions still further demands a series of qualifying terms, such as *hysterical*, *saturnine*, *procurative*, *habit*, *senile*, *rheumatismal*, *dental*, *enteric*, *hereditary*, or *Huntington's electric* (of Dubini or Bergeron), the *chorea of insanity*, the *chorea of pregnancy*.

SYMPTOMS.—Chorea may follow some other affection—one of the ordinary diseases of childhood, for instance—or it may be the sequel of an attack of acute rheumatism; or again, it may have no basis except a general reduction of vital power with anæmia and its belongings. In such cases the development of the malady is slow and insidious, and the child for a long time presents simply those evidences of neural malnutrition which are so common. It is peevish and capricious, and restless in the extreme. Its petty exhibitions of temper render it a nuisance, and it receives its full allowance of punishment. The same caprice of disposition is found in eating—it prefers improper food, and at best eats but little. It is listless and dull at school, sleep is disturbed, and frightful dreams produce night terrors and nocturnal incontinence. Its pale face makes more conspicuous the dark spots under the eyes, and its foul breath and dry teeth betoken a derangement of digestion. After a while it begins to shrug one shoulder or the other, and twitches its hands, or fumbles the seam of the trousers, or opens its mouth with a sort of gasping movement, or twitches its lips, or corrugates its brow, or spasmodically closes its eyes; or does something else that may be regarded as

a trick or bad habit. Scolding or whipping does not effect a change of behavior—in fact, it rather aggravates the trouble. In a week or two the movements are more pronounced or general, the arm is swayed hither and thither by the action of the pectoral muscles, or the hand is supinated or pronated, the fingers restlessly cramp, the lips are pursed, and any attempt at speech is attended by hesitation and embarrassment, and oftentimes by great indistinctness. The patient breathes in a catchy, quick way, and if the body be stripped it will be found that the action of the intercostals is uneven. There is rotary swaying of the body, constant shrugging of the shoulders. The leg of one side—usually the right—is affected, and after a while there is greater or less loss of power, so that there is a well-marked dragging of the limb, which is usually more noticeable toward the latter part of the day. All the voluntary muscles are more or less affected, and as a rule those are most involved which are used to the greatest extent in acts which become automatic. In the form known as laryngeal chorea the thyro-hyoid muscles are affected, and phonation becomes seriously embarrassed. The tongue, when protruded, is found to be the seat of jerking spasms, and when the patient talks he makes a peculiar sucking motion of the lips.

Symptoms of spinal sensory irritation mark the prodromal period, and we are furnished with a history of pains and sensitiveness of the vertebral spines.

Pressure on the cervical region sometimes causes great distress, and especially is this the case when even light pressure is made upon the *vertebra prominens*. The patient complains of pains in the wrists and ankles, which suggest rheumatism, and the bellies of the affected muscles are sore.

Spots of cutaneous hyperæsthesia or anæsthesia are sometimes detected. In hysterical chorea the latter are very often present, and I have repeatedly found hemianæsthesia upon the left side.

The vision is affected, and, as a rule, errors in accommodation are found. So common is hypermetropia that it has been advanced as a cause of the disease, and a most absurd therapeutic course, which involves the use of glasses and operations, has been advised by one individual; but Dr. C. S. Bull exploded this theory, showing by statistics the frequency of hypermetropia in non-choreic children and others. In debilitated subjects it is not difficult to get a history of dimness of vision, and sometimes we find pupillary alterations which consist usually in dilatation, and the pupils, as von Ziemssen has observed, are very sluggish.

Electrical response is somewhat altered. Rosenthal² found an increase in the electro-muscular contractility, with weak currents, in those patients who suffered from unilateral chorea. Galvanic excitability was pronounced, and cathodal opening with weak currents produced contraction. Benedikt obtained the same results, and also found that the electric sensibility is much exaggerated, and, when the electrode is applied to the cervical or dorsal region, eccentric pains in the limbs are complained of.

The presence of cutaneous eruptions is not uncommon. Eczema, as was originally shown by Fraenkel and myself, bears a very close relation to chorea, especially in children.

The movements, as a rule, cease when the patient sleeps, but this is sometimes not the case in pronounced or violent examples. Of one hundred and fifty-eight cases collected by Sée this was the rule, there being but six exceptions.

Dr. Robert Amory Hare³ has conducted some investigations which go to show that monochorea is associated with elevation of temperature in the affected limb. Most of the conclusions were arrived at by simply estimating the degree of heat by applying the hand to the part or by the subjective complaints of the patient. When the thermometer was used a difference of four or five degrees was often found to exist between the two sides of the body.

The psychical changes in chorea have impressed such observers as Romberg, Skoda, and Marcé. This latter writer has referred to cases in which hallucinations were

present, and feelings of dread were very pronounced; and Rosenthal mentions an old woman who was unusually garrulous and loquacious, and gave "utterance to savage cries." The hallucinations are most often presented in the half-waking state, and are, as a rule, visual. A case in which hallucination of an extremely interesting character was a feature is related by Ritti (*Union médicale*, 3me série, t. xix., p. 721, 1873), the subject being a girl aged nineteen. The hallucination depended upon derangement of all the senses, but principally of sight. She saw cats, bright lights; heard the voices of men close to her; perceived imaginary smells, tasted poisonous substances, etc.

Thore⁴ reports a case of melancholia in a chlorotic girl, aged sixteen, who suffered from disturbed menses. Six weeks after the commencement of the melancholia she developed chorea which involved both extremities on the left side. She had auditory hallucinations at night, suicidal tendencies, more aggravated melancholia; and recovered, six weeks afterward, when the menses were re-established.

I have seen a number of cases in which mental perversion was conspicuous. Two cases in particular now occur to me. One was that of an old woman who had general and very severe chorea, and who for ten or twelve years was a confirmed chronic maniac. The other case was that of a young woman, aged twenty-five, who suffered from hysterical mania. In the first case the autopsy revealed very extensive cortical degeneration. I think, as a rule, that the form of mental trouble presented by choreics is that of excitement, and the psychical derangement is more common among adults than among children.

Some writers speak of a marked loss of memory; this I have never found except when the chorea was a symptom of dementia.

The urine of the choreic patient is often copious in amount, and, in those cases in which there is a rheumatismal complication, is apt to be loaded with the urates and phosphates. Sugar is occasionally found. Franke reports the case of a boy who suffered with chorea major, and whose urine contained sugar after each violent attack. In the intervals it was normal. This relationship, however, cannot be regarded as a matter of very great importance. Hanfield Jones, who has repeatedly examined the urine of these patients, thus tabulates the result of his urinary examination: "1. In tolerably severe cases, during the full sway of the disorder, the urine may be of high specific gravity, 1.030 to 1.040, contains an excess of urea; after crystallizing copiously with half its volume of nitric acid, deposits sometimes lithates, sometimes phosphates; its color is full, and on boiling with one-fourth its volume of muriatic acid it darkens extremely. 2. The total amount of urea and of phosphoric acid excreted in twenty-four hours may be greatly in excess. 3. In convalescence the specific gravity falls considerably, the color becomes paler, there is less darkening when the urine is boiled with muriatic acid, and the amount of urea and phosphoric acid may diminish to less than one-half. 4. The bodily weight increases during the period of convalescence. 5. It does not appear that the nervo-muscular agitation determines the increased excretion of urea, as the latter may be very marked in the paralytic form of the malady."

The relation of chorea to rheumatism and cardiac disease is one of the utmost importance. In 1839, Bright first insisted upon the recognition of the association of chorea with affections of the heart and pericardium, and in 1849 and 1850 Roth and Sée systematically described the rheumatismal origin of chorea. They, as well as Roger and Axenfeld, hold the following general views: Chorea may develop in the subject of acute articular rheumatism. The jactitations may appear in the course of an arthritic attack, but rarely when the temperature is high. The chorea may take the place of an attack of inflammatory trouble, and in the same subject the two conditions may alternate. In other cases the two diseases may coexist and be due to the same cause. Axenfeld speaks of the appearance of chorea in connection with

the decline of the acute inflammatory symptoms. There is a species of antagonism in the vehemence of the maladies, says he, and the choreic movements, if present at all during the fever, are of the slightest kind, and limited to a few grimaces of the face.

The relation of chorea to heart disease is generally recognized to occur under three conditions, and these are tabulated by Axenfeld as: 1. When the chorea precedes the heart disease, a simple chorea without antecedent rheumatic trouble, the cardiac affection beginning from three weeks to three or four months after the commencement of the chorea. 2. When the cardiac trouble precedes the chorea, *e.g.*, when an attack of pericarditis is followed in from ten days to three weeks by well-established chorea. 3. When the chorea and cardiac affection begin simultaneously, or nearly so.

There are a variety of conditions which complicate the disease. Some of these are of an asthenic nature, and others are coincident diseases of infancy. Sometimes these intercurrent affections exercise a most remarkable effect upon the disease—cutting short the choreic attack. There may be, perhaps, a febrile attack of some intensity, during which the movements are increased until the fever attains the maximum intensity, when a diminution takes place. When the reaction ceases, the movements diminish or disappear. Sometimes such eruptive fevers as variola, when the force of the poison is exerted upon the nerve centres, produce an augmentation in the force and a continuance of the disease; in fact, it is changed perhaps from a simple functional affection to one of a chronic nature.

Chorea very often makes its appearance in pregnant women, usually during the early months of utero-gestation, and may last until a few weeks after delivery, or may become a chronic affection. I have seen many cases originating during the latter part of pregnancy, and lasting for many years; and I am inclined to regard the affection as a very grave one in many instances. In these cases I am of the opinion that some grave embolic lesion takes place, and that this is a result of the peculiar condition of the blood that exists in certain chlorotic subjects. In fact, I have several times witnessed the most serious accidents—cerebral venous thrombosis, and the like—which were due to some such blood state. The chorea of pregnant women is more apt to be bilateral, and the tongue is involved. This fact was first pointed out by Romberg. It is more common among primipare, and, according to Axenfeld, is quite likely to be associated with hysteriform and epileptiform convulsions, which lead to possible abortions. In one of Linck's cases the movements were worse when the patient was lying down. There is a lighter form than that of which I have spoken, which is quite common and begins during the early months of pregnancy, and the prognosis of which is not especially bad.

Hysterical chorea is rare; that is, the form described by Charcot and Bourneville, in which it is associated with the hysterical accès, and is manifested by rhythmical movements. I have not seen more than half a dozen of these cases; but it is by no means uncommon to find chorea developing in hysterical women, the disease, so far as the movements are concerned, differing little, if any, from the familiar disorder of infancy, only being more violent.

The subject of true hysterical, rhythmical chorea will for hours repeat, while apparently unconscious, a succession of movements, let us say of flexion and extension; and while sitting in bed she bows low, recovering herself rapidly, and goes through with this for hours at a time.

Adult chorea is an affection often associated with mental decay. The variety peculiar to old age (*Chorée des Vieillard*) is especially so, and it is frequently met with in association with dementia. I have encountered cases in which the disease lasted fifteen or twenty years, and in one instance the patient was upward of seventy years of age. The disorderly movements are quite general, involving not only the extremities and trunk, but

the muscles of the face, so that the subject makes the most horrible grimaces. In such patients there is nearly always a history of cardiac trouble and old rheumatism.

Congenital idiots are very apt to present various disorders of motility, among which are automatic movements and chorea; in this instance the chorea probably being associated with cerebral hemiatrophy and difference in development between the two sides of the body.

Ireland⁵ speaks of the association of insanity in children with a chorea which is curable. Electric chorea, which was originally described by Dubini, is a disease of endemic character, and it is manifested in a variety of ways: by rhythmical movements which last for weeks; by paralysis and atrophy of the muscles involved in the spasms; by local epileptiform convulsions, general at times; by headache and coma, by delirium, and, finally, by death. Its peculiar character gained for it the names *myelitis convulsiva* (Hörstel) and *typhus convulsiva cerebri* (Frua). Delirium and head symptoms usually follow the first four weeks of the disease, and precede the coma (Radcliffe). The duration of the affection is about that of ordinary chorea.

Two very unusual forms of the disorder are known as *tarantism* and *tigrétier*. Both are varieties of chorea major, and are undoubtedly hysterical or imitative in character. The first, which, so far as I can learn, is unknown to-day, was supposed to be due to the bite of the tarantula. The development of the disease was marked by a period of depression and stupidity; and when the sound of musical instruments was heard, the victims leaped into the air and indulged in a wild species of dance, continuing it until powerless from exhaustion. During the epidemic sexual excesses of all kinds were rife.

The *tigrétier*, a disease of modern times, resembles very much the *tarantism*, and, in fact, both of these are in many respects like those forms of religious excitement which bring with them suspension of inhibitory control and great disorder of muscular movement. We are furnished with examples both in this country and abroad, and the *convulsionnaires* in France and the *jumpers* of Maine may be instanced.

ETIOLOGY.—Chorea, as a rule, is a disease of early life, and this may be said to be almost absolute in regard to chorea minor. The more severe affections, which include *hemichorea*, have, as a rule, some basis of cerebral change. The period, then, at which the disease is most common is between the ages of eight and eighteen; from eight to twelve it is very common. Congenital cases have been reported by Richter and Fox,⁶ and Simon has met with it in children a few days old. Of 195 cases reported by Haven,² 2 were said to be congenital, 11 were less than six years old, 92 between six and eleven, 58 between eleven and fifteen, 22 between fifteen and twenty-one, and 10 between twenty-one and sixty.⁷ Heller⁸ also presents a case. In adults we find that cases have been reported at all ages, and, as I have said before, even in advanced life. Some cases begin in childhood and continue through life, and others recur every year for several years and then subside. I have found, and I think my experience is borne out by the statistics of others, that the disease is most frequent during the spring or fall. I have repeatedly seen cases that commenced in October and continued until April or May, but, as a rule, under proper treatment the disease is not so protracted. In such cases I find often a history of *eczema capitis* and gastric derangements, and it is not uncommon to find the skin disease and the chorea in association. Sometimes the *eczema* takes the place of the chorea and marks the period of subsidence. So far as local climatic influences are observed, it would seem as if the disease belonged to cold or temperate countries. Axenfeld states, upon the authority of Ruzf de Lavison, that it is unknown in Martinique, Guadeloupe, and other hot places; and I find that, while not unknown in our own Southern country, it is of comparatively infrequent appearance there. It is certain that the negro is exempt from the disease, as Dr. Mitchell has proved from inquiries he has specially