

small round swelling, sensitive upon pressure. In bad cases there are nausea, anxiety, delirium, and cold perspirations; the scantily passed urine becomes purulent and bloody, alkaline and fetid.

**Chronic cystitis** has usually much less severity of symptoms; but it may be very distressing, from the tenderness and irritability of the bladder, and the frequent disposition to urinate, with dysuria. The urine is either mucous or muco-purulent.

**Treatment.**—**Acute** cystitis, with perfect rest, may need leeching or cupping above the pubes or (leeching) at the perineum. As a laxative, castor oil is apt to be the best. Warm hip-baths will be very soothing. Where heat is great, however, small pieces of ice introduced into the rectum will give more relief. Flaxseed tea may be taken freely. Opium, chloral, hyoscyamus or belladonna may be called for by great pain or nervous irritability. Opium or belladonna *suppositories* [F. 124, 125], or laudanum enemata, will answer best if anodynes have to be repeated often. In **chronic** cystitis local depletion is much less likely to do good. The other measures named may be suitable from time to time; also injections of lime-water and glycerin, or *weak* solution of nitrate of silver, or of sulphate of copper, or acetate of lead, in water or in glycerin, may be serviceable. *Catheterism* may at times be indispensable, both in acute and chronic cystitis; but it should be avoided if possible, on account of the mechanical irritation of the instrument. Even in washing out the bladder, care must be taken, as harm may be done by the forcible introduction of too large an amount of fluid; or, still more, by too strong solutions of stimulating substances.

#### RETENTION OF URINE.

**Synonyms.**—*Strangury, Dysuria, Ischuria.* Although the *mechanical* or *surgical* causes and history of difficult or arrested urination do not belong to this work, it will be proper to speak briefly of its occasional importance, as a symptom in the course of diseases which every medical practitioner must meet.

Retention of urine is either from *mechanical* obstruction, from *spasm*, with or without inflammatory congestion at the neck of the bladder, or from vesical atony or *paralysis*. The first occurs in cases of stricture, calculus, etc.; the second under the influence of cantharides or turpentine, or in cystitis from any cause; the third, in typhus, typhoid, and other low fevers and states of debility.

It is very easy in all but the last-named cases to distinguish retention from suppression of urine. In low fevers, etc., it is not at all difficult to make this diagnosis upon *examination*; without it, the retention may be overlooked. A practitioner must never forget to *ascertain* whether his patient passes water or not. In all serious diseases, indeed, its regular *inspection* is important.

In the semi-paralytic retention of low states, catheterism is generally required; and, when *distension and dulness upon percussion above the pubes*, with absence of urinary discharge for twelve or twenty-four hours, or only dribbling, mark the case, the instrument should be used without delay, and repeatedly; at least once daily in most instances.

**Spasmodic** retention of urine, or strangury, with or without the concomitant existence of stricture or gravel, may demand other means of relief than the catheter. The warm hip-bath, prolonged for half an hour, is one of the best measures. Cloths wrung out of hot water applied to the perineum and over the pubes may assist. Leeches to the perineum, when there is local tenderness, will often promote relaxation of the part. Laudanum enemata, and opium [F. 124, 125] or belladonna *suppositories*, will sometimes relieve when other measures fail. Anæsthetic inhalations might be resorted to in an extreme case. Hypodermic injection of morphia has been used to give relief.

#### ENURESIS.

**Definition.**—Incontinence of urine. Except from paralysis or some local lesion, this troublesome affection is not apt to occur in the adult. In children it is common, especially at *night*.

**Treatment.**—Withholding fluids for some hours before bedtime, unless in very small quantities, and taking the child up to urinate after two or three hours of sleep, will generally prevent enuresis. Of medicines, those most employed (with variable success) are belladonna, benzoic acid [F. 126], and tincture of chloride of iron. *Chloral*<sup>1</sup> has been found useful, and so has *iodide of iron*.<sup>2</sup> Corrigan<sup>3</sup> recommends sealing up the prepuce at night with collodion.

*Moral* impressions, acting upon the child's sense of shame or wrong, are only proper to be made use of with great care and discretion; but sometimes they have much power.

### AFFECTIONS OF THE BRAIN AND NERVOUS SYSTEM.

#### INFLAMMATION OF THE BRAIN.

**Synonyms.**—*Encephalitis, Phrenitis, Meningitis, Cerebritis.* The last two are not, of course, technically identical; but they are not clinically separable. (See *Softening of the Brain.*) Inflammation of the membranes derives its importance from the implication of the brain.

**Varieties.**—*Simple* and *scrofulous* encephalitis or meningo-cerebritis.

**Simple Meningo-cerebritis** (meningitis). **Symptoms.**—Intense headache, redness of face and eyes, an excited look, dizziness, roaring in the ears, extreme sensitiveness to light and sound, restlessness, wakefulness, wild delirium. Vomiting is common; the bowels are usually costive. Some dangerous cases exhibit but little mental excitement even at the beginning, and very little fever; dulness of mind, deepening into apathy, with vomiting, and general prostration, being the symptoms. Late in the attack in adults, at any period in children, convulsions may occur. Rigid-

<sup>1</sup> Bradbury, Brit. Med. Journal, Feb. 4, 1871.

<sup>2</sup> Barclay, Med. Times and Gazette, Dec. 17, 1870.

<sup>3</sup> Dublin Quart. Journal of Med. Science, Feb. 1870.

ity of the muscles is frequent in bad cases; paralysis often follows convulsions.

**Stages.**—These are generally described (since Whytt) as three. 1st. That of active congestion and inflammation; with hot skin, hard, *rapid*, full, regular pulse, morbid sensitiveness to light and sound, headache, and delirium. 2d. That of commencing effusion and cerebral oppression; with more moderate heat of the surface, stupor, and *slow*, or irregular pulse. 3d. That of cerebral disability or disorganization; with unconsciousness, convulsions, muscular rigidity or paralysis, and *rapid*, *feeble* pulse. This precise succession of stages, however, does not invariably occur.

**Morbid Anatomy.**—Except in *traumatic* cases, the dura mater rarely takes part in the lesions of encephalitis. Rather minute hyperæmic injection is found here and there in the arachnoid membrane; sometimes opacity and thickening occur, with adhesions. In the pia mater, generally with considerable increase of redness, serum has been effused; or even pus. The pia mater adheres firmly to the brain. The ventricles contain more serum than usual, sometimes several ounces. In some cases it is turbid, flocculent, or purulent. The brain itself is most frequently affected with redness in the convolutions, and dots of blood in the medullary portion; also, with softening in the gray or white substance, or in both.

**Diagnosis.**—The distinctions between simple and tuberculous or scrofulous meningitis or encephalitis will be considered presently. Typhoid fever, delirium tremens, and acute mania may be confounded with or mistaken for inflammation of the brain.

Typhoid fever does not generally have vomiting,<sup>1</sup> long-continued headache, or morbid sensibility to light among its symptoms; while tympanites, diarrhoea, bronchitic cough, etc., make it known. In delirium tremens, the origin of the affection in alcoholic excess, the usually horrible illusions, tremor and insomnia, *without headache*, are characteristic. Acute mania is almost or quite without fever; often without headache; and the muscular strength is generally little impaired; vomiting, also, is absent.

**Subacute or chronic** encephalitis, now and then met with, presents greater difficulty in distinguishing it from mania. Indeed, the best authorities in psycho-pathology (study of mental disease) state that cerebral hyperæmia and inflammation bear a not unimportant part in the pathology of insanity. (See *Winslow on the Brain and Mind*.)

Children afford not unfrequent instances of another question in diagnosis; how far *symptoms* affecting the brain may or may not depend upon the *stomach* for their causation. "Gastric fever" and "infantile remittent" are phrases formerly applied often to attacks occurring in childhood or infancy; in which, with fever, indigestion, and vomiting, there is delirium, stupor, or apathy, with or without convulsions. In such cases, the heat of head and fulness of the carotid and temporal arteries are less, the gastric disorder, fur of tongue, etc., greater than in cerebral inflamma-

<sup>1</sup> In infantile typhoid fever, vomiting occurs more often than in adults.

tion. Those not *ephemeral* are mostly cases of typhoid fever. *Cholera infantum* is often attended by brain symptoms; but its other features, the time of year, and locality (in a large city almost always) are distinctive.

The *ophthalmoscope*, under the investigations of Bouchut, Allbutt, Hughlings Jackson, Pagenstecker, and others, has now obtained a recognized place in aiding the diagnosis of affections of the brain, whether inflammatory or atrophic and degenerative. "Choked disk," *i. e.*, active congestion of that portion of the retina around the entrance of the optic nerve, appears to be mostly indicative of cerebral (or at least intra-cranial) inflammation.<sup>1</sup>

**Prognosis.**—Simple encephalitis, under good treatment, is not always fatal, but a majority of cases end in death. I remember several recoveries; three from extremely severe symptoms. In one case, that of a girl ten years of age, a convulsion immediately preceded convalescence.

**Causation.**—Between fifteen and forty-five is the age most subject to this disease. Males are more liable than females to it. Hot climates predispose to it; and so does intemperate living. Exciting causes are blows or falls upon the head, exposure to the sun, violent or prolonged mental excitement, erysipelas of the head, scarlet fever, metastasis of rheumatic or gouty inflammation, repulsion of eruptions upon the skin, suppression of accustomed discharges. Extension of inflammation from the ear (otitis) to the brain is a possibility, important not to be overlooked. Cerebral *thrombosis* may sometimes result from the same cause.

**Treatment.**—No disease is more likely to be benefited by early venesection than acute inflammation of the brain.<sup>2</sup> Bleeding should be the rule—omission of it the exception, necessary in cases of debility, anæmia, etc. But its usefulness depends upon its being early; and it should seldom be repeated. Leeching or cupping may follow it, or sometimes take its place. In children, the difficulty of finding a convenient vein to open may induce dependence upon leeches or cups.

Purging actively is very important, by sulphate or citrate of magnesium, or, if dosing be difficult from delirium, croton oil [F. 127] or elaterium. After one free purging, *moderate* catharsis may be, if necessary, repeated every two or three days; and the bowels should be kept open during the attack.

Cutting the hair very short, or, still better, shaving the whole head, will aid in giving relief, and will allow the effectual application of cold. Pounded ice in a bladder or bag of India-rubber, will do if watched and changed in place often, to prevent too great an impression upon one part. I prefer a linen cloth (as a cambric handkerchief) folded once, dipped in *ice-water*, and laid over the head; it should be wet freshly *every few minutes*, or the

<sup>1</sup> See a paper by Drs. S. W. Mitchell and W. Thompson, *Am. Journal of Med. Sciences*, July, 1874, p. 104.

<sup>2</sup> Dr. Rush (1798) gave an account of the recovery of seven severe cases of inflammation of the brain under venesection. Dr. E. Copeman (*Report on the Cerebral Affections of Infancy*, etc., 1873) cites, in favor of the same practice, Joy, Stewart, Risdon Bennett, Clarke, Davis, and other authorities.

good effect is almost lost. Merely wetting the head now and then with cold water produces a *reaction*, not a *sedation*, which is required. If the feet be cold they should be made warm by mustard foot-baths or sinapisms. In children, the prolonged warm bath may be useful.

The diet in the first part of the attack should be as light and unstimulating as possible. Oatmeal gruel, panada, rice, toast-water, may come first; then milk, chicken-water, mutton broth; later, beef-tea.

Blisters are undoubtedly serviceable after the intensity of the inflammatory excitement has begun to diminish. The best will be a blister *over the whole scalp*.<sup>1</sup>

In a late stage, with secondary debility, concentrated liquid diet, with alcoholic stimulants, and even opium, chloral, or bromide of potassium at night, may be required to support the flagging energies of the system.

Convalescence in the best cases may be slow. The faculties may remain feeble and the brain morbidly excitable for weeks or months; needing great care as to all mental impressions and efforts, lest a dangerous relapse occur, or chronic cerebral hyperæmia, perhaps insanity, follow.

**Scrofulous Encephalitis** (tubercular meningitis, acute hydrocephalus).—From two to fifteen years is the age most apt to yield examples of this fatal disease. Evidences of the scrofulous constitution have mostly been manifested in the previous history of the patient. *Premonitory* symptoms usually occur: dulness, pettishness, and languor, headache, disposition to put the head in the mother's lap or to lie down, loss of appetite, vomiting, and either costiveness or diarrhœa. The child sleeps ill, with grinding of the teeth, or sudden starting with alarm. After four or five days, constant headache and anxiety of countenance, heat of head, sensitiveness to light, fever, and drowsiness, alternated with moaning or occasional *screaming*, and delirium at night, mark the case. In the middle period may be observed the "tache méningitique" of Trousseau; *i. e.*, drawing a finger across the forehead or the abdomen, upon removing it a pink or rose-red line will remain for a time, gradually disappearing.

Advanced symptoms are, total stupor, strabismus, convulsions, paralysis, and rigidity of the limbs. The *pulse* generally goes through similar changes to those of simple encephalitis: first, febrile acceleration, then irregularity and slowness, lastly, the rapidity of moribund prostration. The attack terminates on the average in between two and three weeks.

*Prognosis* is always unfavorable in this disorder. I thought I had met with recovery in one case, the third of his family to be attacked; he remained well apparently for a month, and then died in convulsions.

**Morbid Anatomy.**—Since<sup>2</sup> Papavoine, Ruzf, and Gerhard

<sup>1</sup> I cannot follow Dr. T. K. Chambers (Harveian Oration, 1871, p. 8) in including this treatment among *extinct* procedures. I am sure I have known it to do great good.

<sup>2</sup> Laennec observed the presence of tubercles in the brain in some cases of hydrocephalus.

showed the existence of a relation between tuberculosis and "acute hydrocephalus," autopsic inquiry has proved fully, 1st, that tubercle-like granulations, with opacity and thickening of the arachnoid at the base of the brain, adhesion between the hemispheres, and serous effusion, characterize a number of the cases; 2dly, that all of the other lesions may be found without any tubercle whatever; and 3dly, that the amount of such deposit in *most* cases is not sufficient to modify greatly the course of the local disease, at least in such a manner as tubercle acts elsewhere. I conclude hence (especially in view of such results, palpably shown in autopsy under my own eye), that the semi-transparent gray granulations found in the arachnoid after scrofulous meningitis may be rather tubercloid inflammatory products than tubercles, while it is more the *dialthesis* than the *deposits* that makes the disease to differ, as in progress and prognosis it clearly does, from simple meningitis or encephalitis.

**Treatment.**—What can we venture to do in medication for a hopeless disease? Not to abandon any case of it; for, first, our diagnosis may not be infallible; and, secondly, there are not, as in phthisis, obvious anatomical reasons for anticipating a fatal result in the nature of the case. Waiving argument, for which we have no space, my judgment is in favor of *treating* this form of inflammation of the brain *on the same principle as simple meningitis*, with more caution in depletion and other reducing remedies. I would not bleed from the arm; but draw blood *very moderately* by cups and leeches; purge freely, but not exhaustively; blister the head or back of the neck; apply cold with care, and allow liquid nourishment, such as milk and beef-tea, mutton or chicken broth, etc., from an early stage. Iodide (or bromide?) of potassium may be given at least in protracted cases. If, in this mode, we do not save a patient whom autopsy afterwards shows to have been doomed to die of tuberculization in spite of any treatment, we shall still, according to the indications of clear analogy, have practised rationally; the next best thing to being successful.

#### HYDROCEPHALUS.

**Definition.**—Water in the head; dropsy of the brain. This is almost always an affection of early life. Sometimes it is congenital. It is mostly a passive dropsical effusion; certain cases show signs of a chronic or subacute inflammatory condition of the arachnoid membrane.

**Symptoms.**—Languor, strabismus, convulsions, loss of appetite, increase in the size of the head. This last may be enormous; the fontanelles expanding, and, in a slow case, the bones growing excessively large. The mental faculties are nearly always dull. Bodily emaciation and debility attend.

Although cases are known and recorded in which hydrocephalic persons have lived for more than twenty years, the general rule is that they die in a few months; either from cerebro-spinal disability or atrophy, or from some intercurrent disease not endurable by the impaired vital energy of the system.

The term "hydrencephaloid disease" is a term applied by Mar-

shall Hall, to a condition, not very rare in infants, in which symptoms resembling those of acute hydrocephalus occur, with *functional* brain disorder only. The diagnosis is here not always easy; but with close attention it may be made out. While a doubt exists, reducing measures are, generally, to be avoided. Dr. W. Nickoll has given the name "cerebral erythism" to a transitory determination of blood to the brain, with signs of excitement, in children.

**Treatment.**—Small as is the encouragement given by experience in hydrocephalus, it is certainly justifiable to *try* measures not out of place in themselves. Such are, moderate purging, every few days, or once a week, sustaining the strength by nourishing food, and, if it be borne, cod-liver oil; diuretics; shaving the head and rubbing it nightly with mercurial ointment; occasionally blistering the back of the neck; in a child, preferably by painting it with *cantharidal collodion*.

Is *pressure* by bandages or adhesive straps, or *puncture*, tapping the head, to be advised? Were I to use either of these heroic measures, I would combine them. In a case clearly otherwise hopeless, the *aspirator* may be used, or a needle trocar and canula may be introduced through the coronal suture, an inch or a little less from the anterior fontanelle: then, during and after the withdrawal of a few ounces of fluid, a bandage may be used for pressure, watching its effects. Dr. West has collated accounts of sixty-three operations by puncture, of which eighteen were successful.

#### SOFTENING OF THE BRAIN.

Pathologists generally recognize two forms of this: 1. Acute red **inflammatory** softening; and, 2. Slow, white, **atrophic** softening or degeneration of the brain-substance. Both receive the name of *ramollissement*. Virchow has proposed the term *necrobiosis* (death of a part in the midst of living structure), to designate destructive local change in any part of the body.

The former of these is further definable as a local cerebritis; whose symptoms are not nearly always separable, clinically, from those of meningitis or encephalitis, already described. Cadaveric inspection shows not only hyperæmic redness and softening, but, sometimes, abscess, or even gangrene of the brain. This last (gangrene) is probably always the result of injuries. The cerebrum is more often affected with red softening than the cerebellum.

**Abscess** of the brain is, in some cases, latent for a considerable time. Sudden headache is apt to be the earliest symptom. This is attended by feverishness, vomiting, difficulty of speech, numbness, convulsions, paralysis, and coma. *Otitis* and *pyæmia* are said to be, after injuries, the most frequent direct causes of it.

**Diagnosis of acute red softening.**—The occurrence of imperfect coma, with rigidity of the muscles of the extremities, or of paralysis without loss of consciousness, will make probable this lesion. Most cases die within two weeks; some within two or three days.

**White, atrophic softening** or degeneration of the brain may take

place as a result of old age, or from intense mental labor or excitement, from intemperance, or from *embolism*; that is, obstruction of an artery within the brain by a fibrinous clot carried from some other part. Its approach and progress are more slow and insidious than those of acute inflammatory ramollissement. Neuralgic pains in the limbs, followed by numbness and paralysis; general debility, and dulness of the senses, gradually increasing to blindness, loss of hearing, etc., and a corresponding decline of the mental powers; these are the usual symptoms, which may be extended over a period of many months. Death is sure to be the final result.

**Sclerosis** of the brain is a term applied by Proust and others to a chronic organic affection, in which the cerebral substance becomes *hardened*, instead of softening.

*Glioma* is a kind of tumor (most frequent in early life) affecting the *neuroglia* or connective tissue of the brain, retina, or nerves.

**Treatment.**—If **inflammatory** red softening can be diagnosed at an early period, a similar treatment to that named for acute meningo-encephalitis may be advised. Local depletion at least, followed by counter-irritation by blisters, may be resorted to in a case which appears to be such; the more freely because apoplexy, which most nearly simulates it, presents very similar practical indications.

**Chronic atrophic white softening** is not amenable to any such measures; nor, indeed, to any active remedial treatment. Prevention, by avoidance of its causes, especially by mental repose, and palliation or economy of the waning powers of the system, are alone possible. The management necessary upon such indications must vary somewhat with every case.

#### INFLAMMATION OF THE SPINAL MARROW.

**Clinical Synonyms.**—*Myelitis*, *Spinal Meningitis*.—The symptoms of this rather uncommon affection are, constant and severe pain in the back, increased by motion; spasmodic contractions or rigidity of the muscles, followed by paralysis, fever, constipation of the bowels, and retention of urine. Authors state that in **myelitis proper**, as distinguished from **spinal arachnitis**, there is no pain nor muscular rigidity, but only paralysis of motion and sensation.

**Morbid Anatomy.**—Diffuse redness and opacity of the arachnoid, swelling, and infiltration of the pia mater, with effusion of serum, communicating freely with the cavity of the cranium, are generally found. Adhesions of the membranes from plastic lymph are less common; and still less so, though repeatedly recorded, is suppuration within the arachnoid. The dura mater is occasionally affected with inflammation, and even ulceration and gangrene, commencing from without. The cord may be reddened from injection of its substance, and softened; more rarely, indurated in parts.

**Treatment.**—Local bleeding, by rather free cupping or leeching along the spine, followed by a blister, and active purgation with saline cathartics, with entire rest of the body, constitute the essen-

tial parts of the treatment of simple acute inflammation of the spinal cord or of its membranes. If the diagnosis be doubtful, the practice must be disproportionately less bold; this is, of course, a principle of very general application in therapeutics.

**Epidemic cerebro-spinal meningitis** will be considered hereafter, as **cerebro-spinal** or **spotted fever**.

#### SOFTENING OF THE SPINAL CORD.

Rejecting the not uncommon view which refers **ramollissement** of the cord in *all* cases to inflammation, I have considered softening as one of the lesions which may be produced by myelitis or spinal arachnitis; but would separate from this, as in the case of cerebral softening, the **chronic atrophic** degeneration which results in a similar change.

The **symptoms** of spinal softening are, first, numbness in the extremities, with a sense of coldness; pain in a portion of the back, with local tenderness on pressure; then impaired mobility, and gradual loss of sensation in the limbs, or in one limb, if only one side of the cord be affected. When the anterior columns only are softened, *motor* paralysis prevails; if the posterior columns, *sensibility* is impaired or destroyed. Difficulty in walking, especially on first rising in the morning, is an early symptom. Contractions and rigidity of muscles occur later. At a still more advanced period, loss of control over the bladder and rectum adds to the distress of the patient, who is apt to suffer also from bed-sores; ulceration, and sloughing of the parts upon which the body rests; the system becoming gradually exhausted.

**Prognosis and Treatment.**—Recovery is not to be expected from atrophic spinal softening. The most unfavorable symptoms are decided paralysis, involuntary urination and defecation, with *alkalinity of the urine*. **Treatment** must be palliative and supporting only. Passive exercise (as by riding in an easy carriage, sailing, or being carried) in the open air will be beneficial; and so may salt bathing and frictions of the surface of the body. Good diet, appetizing tonics (especially phosphorus), and sometimes alcoholic stimulants, very carefully regulated, may retard the decline of the patient.

#### SPINAL IRRITATION.

Under this term (now discarded by many writers upon nosology and diagnosis) have been included several affections of different pathology, and not always identical in symptoms. Pain, tenderness, and weakness in the back, with flying pains in the chest and sides, and sometimes local spasms, without proof of any decided or progressive lesion of the cord, or either motor or sensory paralysis, appear to be the common features in such cases. I think a name should be reserved for this combination, for practical or clinical use; although, as in the case of dyspepsia, and some other complex disorders, the term used may not well define the disease. It was first proposed in clinical medicine by Dr. Brown, of Glasgow, 1828. Teale (of Leeds) wrote a work upon it. Dr. W. A. Hammond has more recently (1870) reasserted its practical importance. He considers tenderness of the spine on pressure an essential sign.

Some cases included in this account are really **rheumatoid** (chronic non-febrile rheumatic) affections of the sheaths of the spinal nerves; others are instances of **myalgia**; that is, *muscular* pains from weakness and exhaustion in the muscles. Others again display, with anæmia and general nervous debility, a real irritability of the cord, shown by (hysterical) spasms of some muscles, or general convulsions, under disturbing impressions of various kinds. Dr. Benjamin Lee,<sup>1</sup> of Philadelphia, has written elaborately upon *spinal arthro-chondritis*, or inflammation of one or more of the intervertebral articulations, involving the intervertebral fibro-cartilage. The typical symptoms described are pain, often remote; muscular spasm; and permanent muscular contraction.

**Treatment.**—The discovery of the *nature* of the case (as above indicated) is important. If, in an otherwise vigorous person, the attack comes on after some exposure, the rheumatoid condition is most probable; and then cupping along the spine will do the most good. Afterwards counter-irritation, as by croton oil, may be used, and wearing flannel next the skin will be important.

**Myalgic** or purely muscular pains follow generally upon fatigue, and are best cured by repose, aided by warm frictions, as with spirit of turpentine, whisky and hot water, whisky and salt, etc.

**True spinal irritability** (*i. e.*, of the cord, *not always* attended by sensitiveness to pressure along the back) is generally an affection of the anæmic and weak. Iron and other tonics, with nourishing food, salt bathing, and pure air, are demanded; and with these, mild counter-irritation over the spine. Hemlock or Burgundy pitch plasters; repeated dry cupping; painting with tincture of iodine; and the use of croton oil externally, are the best measures of this kind for such a purpose. Electricity may also be serviceable; especially the continuous current.

#### INFLAMMATION OF THE EYE.

Although ophthalmology is appropriated as a department of surgery, every medical practitioner meets with cases of affections of the eye so often, as to make it proper to notice here, briefly, its principal acute disorders.

**Varieties.**—Conjunctivitis (*ophthalmia*, by usage), simple catarrhal, pustular, and purulent (Egyptian, military, and gonorrhœal ophthalmia, and ophthalmia *neonatorum*, *i. e.*, of new-born infants); keratitis (corneitis); sclerotitis; (rheumatic-ophthalmia); iritis (simple, traumatic, syphilitic); retinitis.

**Simple and Catarrhal Ophthalmia: Symptoms.**—Bloodshot appearance of the eye, with soreness, pain, and dislike of light, characterize *simple* conjunctivitis. Blotched or irregular injection of the conjunctiva, becoming in severe cases general and velvet-like, with, sometimes, *chemosis* (raising of the mucous membrane in spots, like little water blisters) and mucous discharge, agglutinating the lids together especially at night; these are the symptoms of the *catarrhal* variety or grade.

**Treatment.**—When the inflammation is severe and recent,

<sup>1</sup> Transactions of Medical Society of Pennsylvania, 1868.

leeches to the temple near the eye will do good. Iced sassafras-pith water may be applied by laying a light piece of linen, soaked anew every few minutes, over the closed lids; or, better, by the frequent use of a clean camel's-hair pencil dipped in the cold demulcent liquid. Nitrate of silver solution, two grains to the ounce of distilled water, is recommended to be dropped from a quill or camel's-hair pencil into the eye, twice daily. A saline cathartic at the beginning of the attack will generally be useful; and so will be, a little later, a fly-blister behind the ear. When convalescence has fairly commenced, the use of the injection may be made at longer intervals, once in a day or two; the eye being then kept closed, if the mucous discharge be slight, by a strip of isinglass plaster over the middle of both lids. After recovery, the eyes will be weak for a time, and must be used with caution and moderation. Adhesion of the lids is best prevented, at any stage, by the application of spermaceti ointment, castor oil, or glycerin cream, to their margin.

Persistent redness and swelling of the lids will often give way under the use, nightly, as an unguent, of the *cerate of carbonate of lead* [F. 88]. Painting the exterior of the lids, many times daily, by means of a camel's-hair pencil, with diluted extract of lead (one drop of Goulard's extract in an ounce of water), followed by cold cream or glycerin cream at night, has, to my knowledge, relieved greatly cases of long-standing "weakness" or irritability of the eyes. *Granular conjunctiva*, or "chronic ophthalmia," not yielding to the above measures, may be referred to the resources of the special ophthalmologist. *Pustular ophthalmia* is characterized by the formation upon the conjunctiva of small vesicular elevations resembling pustules, although rarely discharging pus. In other respects, the attack resembles catarrhal inflammation.

**Purulent Ophthalmia.**—1. **Ophthalmia of infancy.** Leucorrhœa or gonorrhœa of the mother may produce this; or it may follow exposure to cold or damp air, acting upon a system predisposed by imperfect nutrition. The danger of it is, the possibility of rapidly destructive ulceration of the cornea, causing blindness. It is possible, however, for a considerable ulcer of the cornea to heal, in a child, even without leaving an opaque cicatrix.

**Treatment.**—Introduce, by inserting the smooth point of a small syringe just within the inner commissure of the lids, several times a day, a solution of three grains of alum to the ounce of water; alternated occasionally with a solution, of one or two grains to the ounce, of nitrate of silver. As very much depends upon the vital energy of the child's system, especial care must be taken as to its nourishment, bathing, and the state of its bowels.

2. **Gonorrhœal Ophthalmia.**—Produced by contact of the virulent poison of gonorrhœa, this is perhaps the worst form of inflammation of the eye. At the beginning, it (as well as ordinary purulent ophthalmia) may resemble catarrhal inflammation; but its course is so rapid and violent as to become suppurative in one or two days. Haziness of the cornea, and chemosis, followed by ulceration, perforation, or sloughing, may occur. Such ulcers are

apt to leave white and opaque cicatrices, even if not very deep, in the adult.

**Treatment.**—Begin with a brisk purgation. Then apply, at once, and frequently, in alternation, solution of alum, ten grains in an ounce, and solution of nitrate of silver, four grains in an ounce. If the specific character of the inflammation can thus be annulled, the destruction of the cornea may be averted. Sometimes good surgeons have applied the solid nitrate of silver to the ulcerated surface. The prognosis, however, in this form of disease, is generally unfavorable to the safety of vision.

**Keratitis.** (*Corneitis.*)—A zone of vessels in the sclerotic, immediately surrounding the cornea, with *haziness* in the latter itself, amounting in time to opacity, marks this affection. When developed, we will find a plexus of fine vessels arranged in a crescent or semicircle, along the upper or lower edge of the cornea, or both. Intolerance of light is great; any exposure of the eye causes a flow of tears. Children and adolescents are most generally the subjects of inflammation of the cornea. It may be of short duration, the opacity disappearing, in a young person; at a later period of life, it is more obstinate; and if the attack lingers for several months, cloudiness remains.

**Treatment.**—Most subjects of corneal inflammation are of delicate frame and depressed health. Tonics and good diet are more likely, in them, to be indicated than depletion. Repeated blistering behind the ears will be proper. The bowels should be well opened, and the eyes sheltered from strong light, while photophobia (intolerance of light) exists. In no form of disease of the eye, however, unless for a short time in a very acute attack, should a patient be imprisoned in a dark room. The want of air, and even of sunshine, will do more harm than good. When otherwise in a state fit for it, he may go out with the eyes protected by a shade or suitable glasses, or a veil. Good authority prohibits the use of nitrate of silver solutions as *mischievous* in *corneal* inflammation.

**Sclerotitis;** rheumatic ophthalmia. This is shown by diffused redness of the eyeball, with enlargement of the arteries converging to the margin of the cornea; and *severe pain* in the ball, with intolerance of light.

**Treatment.**—Not satisfied that there is always proof of the "rheumatic diathesis" in every case of sclerotic inflammation, I should still incline to prescribe for it, as a general rule, a combination of colchicum with an alkali (as carbonate of potassium), after a saline cathartic. A blister may then be applied behind the ear or back of the neck. *Anodynes* are apt to be called for; as belladonna or opiates; so severe is the pain in many instances.

**Iritis.**—Writers describe the forms of inflammation of the iris as **simple, traumatic, gouty and rheumatic, scrofulous, and syphilitic.** The first and last of these are the most important and distinctive.

In either form of inflammation, a *vascular zone in the sclerotic*, near the cornea, *fixedness* and *irregularity* of the *pupil*, with a greenish hue of the iris, if it be naturally blue, are the usual signs.

**Treatment.**—In a robust patient, leeches around the eye; in a weaker one, a blister behind the ear; saline purgation, repose to the eye, and steaming it frequently over hot water, are measures that nearly all will agree upon. More difference of opinion exists as to the use of *mercury* in iritis. Some give it to retard the effusion of lymph in all cases. Others, only in the syphilitic. A number, rather increasing of late, in none. I would give calomel in all cases of active iritis, but in none so largely as to endanger salivation. One grain twice daily for a few days will be enough; stopping it if the gums be at all affected.

Maintaining moderate dilatation of the pupil is considered important in all cases of iritis. For this purpose *atropia* is locally used. Once or twice daily there may be dropped into the eye two or three drops of a solution of two grains of sulphate of atropia in an ounce of water.

**Retinitis.**—So obscure is the diagnosis of this, and so greatly has its pathology been modified since the introduction of the ophthalmoscope,<sup>1</sup> that it will be the best for us to refer for its consideration to works especially upon the Eye. (See *Mackenzie, Lawrence and Moon*, etc.)

*Retinal apoplexy*, or hemorrhage of the retina, sometimes occurs; especially in connection with cerebral or cardiac disease. It is generally sudden, causing partial or total blindness. (See a paper by Dr. C. S. Bull, *Am. Journal of Med. Sciences*, July, 1874.)

#### OTITIS.

**Definition.**—Inflammation of the ear. This is most common in children. *Scrofulous* inflammation and suppuration of the external meatus, with chronic discharge, is frequently met with. *Scarlet fever* not rarely is attended by otitis, extending from the throat; sometimes ulceration destroys the *membrana tympani*, and even the *ossicula*; causing deafness.

**Otalgia**, earache, occurs often without much inflammation, as an almost entirely neuralgic affection. Pain, however, is the first symptom of otitis; with soreness on pressure upon the meatus or the mastoid process, and heat of the ear. An infant may suffer from this without being able to designate the seat of its distress. It cries or screams at intervals, and buries its head in the pillow, or leans the affected side against its mother's breast or arm. Often in the course of a day or two a purulent discharge gives relief to the intensity of the attack. In other cases pain returns again and again, the soreness continuing without discharge for weeks together.

<sup>1</sup> In acute inflammations of the eye or brain its use appears to me unsuitable, on account of the intense irritation likely to attend the steady glare of a direct light upon the already morbidly sensitive eye. Bouchut, however, has written a volume upon it as a means of diagnosis in diseases of the brain, as meningitis, etc. In amaurosis, an important distinction has been made out between those cases dependent upon *neuritis optici intraocularis* (inflammation of the optic nerve within the eye), and those which are entirely paralytic in nature. Ogle, Hughlings Jackson, Earnest Hart, and others, urge the importance of using the ophthalmoscope as a means of diagnosis in all cases of suspected cerebral disease. In defects of vision connected with loss of functional power in the optic nerve, Dr. D. Dyce Brown has found *santonin* (1 gr. daily) very useful. See *Brit. and For. Med.-Chir. Rev.*, April, 1871.

Extension of inflammation from the external ear to the membranes of the brain is possible in severe acute otitis; but it is almost as likely to happen in cases of long-continued *otorrhoea*, or discharge from the ear; particularly if this be suddenly arrested.

Dr. Lidell and others have pointed out that the production of cerebral *thrombosis* (obstruction from coagulation in a vein or veins within the cranium) is one of the dangers of otitis. Sometimes the connecting link between the two affections is caries or necrosis of the petrous portion of the temporal bone.

**Treatment.**—*Earache* may be relieved usually by dropping into the ear three or four drops of olive or almond oil, with one or two drops of laudanum. If continued pain, with heat and tenderness on pressure show decided inflammation, a few American leeches may be applied behind the ear; and afterwards a small blister (when the leech-bites have healed) upon the same place. Painting with the cantharidal collodion will here prove very convenient.

Chronic discharge from the ear should be treated with mild astringents, very gently applied. Syringing is not nearly always necessary; if done with force it irritates, and may cause headache and nausea. Pouring the lotion from a teaspoon, the patient lying upon the other side and turning over to allow it to run out, will generally do better. Lotions so used should be *warm*.

Castile soap and water; lime-water; glycerin and rose-water (one part to five); and solution of acetate of lead, one or two grains in an ounce of water, will prove the best washes, and sufficiently strong to mitigate without too suddenly checking the discharge. Pure alcohol (F. E. Weber) is sometimes employed for the same purpose.

**Deafness** (cophosis), in greater or less degree, may result from, 1. Accumulation of wax in the ear; 2. Inflammatory thickening of the *membrana tympani*; 3. Obstruction of the Eustachian tube; 4. Perforation of the tympanic membrane; 5. Destruction of the *ossicula* of the ear; 6. Paralysis of the auditory nerve. Only in case of the *last* is the patient unable to hear the ticking of a watch placed *between the teeth*. The effects of the first two are often transitory.

**Meniere's disease** is the name given (since 1861) to an affection in which severe symptoms, as giddiness (labyrinthine vertigo), staggering, and vomiting follow lesions in the labyrinth of the ear. The pathology of this disorder is not well known. Dr. Knapp,<sup>1</sup> of New York, believes that there is always either hemorrhage or serous or purulent exudation into the semicircular canals.

#### HEATSTROKE.

**Synonyms.**—*Sunstroke; Coup de Soleil; Insolatio*. Two forms of heatstroke undoubtedly occur. In one the direct rays of the sun upon the head induce *cerebral congestion*; in the other excessive heat, often not under the immediate influence of the sun, affects the whole system with prostration, apparently from a *blood-change*; the chemical operation of the economy being modi-

<sup>1</sup> *Archives of Ophthalmology and Otology*, vol. ii., No. 1. See, also, *Hinton, Guy's Hospital Reports*, vol. xviii., 1873.