

series of years, and his conviction is strengthened that when the habit of the system is interrupted by such means there is a distinct tendency for the disease to wear out (May, 1901).

The new pathological views to which reference has been made, and which identify the disease in question with certain abnormalities and pathological changes within the nasal cavities, have led to local treatment of greater or less severity, instituted with a view of getting rid of the cause entirely. Any abnormal prominences or growths connected with either the mucous membrane or the bones are attacked by the snare or galvanic cautery and destroyed, or if the trouble is found to consist in turgescence of the erectile mucous membrane, various stimulating applications are resorted to, and with most satisfactory results to those who have used them. The method is recommended by such capable observers, and specialists so skilful in their departments, that it is certainly worthy of more extended trial. As reported, the results have been very good, but it is yet too early to utter any *ex-cathedra* opinions upon the subject. Several who have undergone the treatment referred to have fallen under the writer's notice. Some have thought they were benefited, others that they were not improved, and one, at least, believed that he was worse than before. Most of the cases were met at a hay-fever resort. It is but right to add that some of the cases had not undergone the number of local applications which their attendants thought were necessary to work a complete cure. While the application of mechanical and operative measures may be safely tried within certain limits, there would seem to be danger of carrying the practice too far. It should not be forgotten that extensive tracts of cicatricial tissue may become the seat of more serious disease than hay fever. For the latter we have a tolerably certain and satisfactory palliative, if not a permanently radical cure, in temporary change of residence, while at present operative interference is undertaken only with the chance of permanent relief. As has been already stated, this form of treatment is less frequently resorted to at the present time, having proved disappointing to its advocates.

Those who desire to familiarize themselves with the natural history of hay fever will do well to consult the admirable work, "Autumnal Catarrh," by Morrill Wyman, M.D. (New York, 1872), in which they will find the best account of the disease and the most careful study of places where exemption from its attacks exists. Those who desire to know all about the pollen theory, and the extent to which it can be carried, will do well to consult "Experimental Researches on the Causes and Nature of Catarrhus Æstivus," by Charles H. Blackley, M.R.C.S. Eng. (London, 1873), and "Hay Fever: its Etiology and Treatment, with an Appendix on Rose Cold," by Morell Mackenzie, M.D. (London, 1885). This last book is most vigorously reviewed in the *American Journal of the Medical Sciences* for October, 1885, by Dr. John N. Mackenzie, of Baltimore, who has also contributed several papers bearing upon hay fever to various journals, in which he ably upholds the neurotic and anatomical theory of the disease. An able and suggestive paper will be found in the number of the *American Journal* for January, 1886, in which Sir Andrew Clark maintains very similar views, but would account for the asthmatic spasm by temporary and sudden congestion of the mucous membranes rather than by muscular constriction of the bronchial tubes. In "Hay Fever and its Successful Treatment by Superficial Organic Alteration of the Nasal Mucous Membrane," by Charles E. Sajous, M.D. (Philadelphia, 1885), there will also be found an exposition of the modern views, and details of the treatment recently so highly lauded for this most troublesome affection. Other papers upon the subject will be found scattered through the journals by Daly, Roe, Allen, Bosworth, Da Costa, Beverley Robinson, S. S. Cohen, and Hack. The work of Dr. W. C. Hollopeter, of Philadelphia, is among the more recent contributions to this subject.

Samuel Ashhurst.

HAYWOOD WHITE SULPHUR SPRING.—Post-Office.—Waynesville, Haywood County, North Carolina. Hotel and cottages.

Access.—From Asheville, via Murphy branch of the Western North Carolina Railroad, thirty miles west. The location of these springs is in the heart of the Alleghenies at the foot of the Great Balsam Mountains, where the peaks tower 5,000 to 6,000 feet in height. The altitude at the springs is about 2,800 feet. The surrounding scenery is of surpassing beauty, not excelled in rugged grandeur east of the Rockies. During the summer and autumn seasons the weather here is generally delightful, the temperature ranging from 56° to 80° F. The hotel is usually crowded with visitors at these times, some of them from remote points. There are two springs, one sulphur, the other iron. The temperature of the water is 54° F. No complete analysis has been made, but we are informed that the waters contain, besides sulphur and iron, salts of sodium, potassium, and magnesium. The present hotel, a large and commodious brick building, with surrounding wooden cottages, is located on the banks of the Richland River, a beautiful trout stream. Numerous attractions in the way of shooting, fishing, archery, tennis, bowling, and billiards are at the option of the guests. The medical properties of the water have been amply attested, especially in chronic functional disturbances of the liver, stomach, and kidneys. Rheumatism and neuralgic troubles are benefited by the hot baths.

James K. Crook.

HEADACHE.—Headache is a frequent manifestation of the most varied disorders of the nervous system and of other organs. Being merely a symptom of so many different morbid states, it cannot be consistently characterized or described as a disease, although it is occasionally of such a nature as to possess the significance of an independent affection.

It may be so fleeting or transient as to be more or less ignored by the patient, or it may attain such a degree of severity or persistency as to lead the sufferer to seek medical advice. Familiarity with its various forms is essential, and it is necessary always to bear in mind that headache is a frequent accompaniment of many constitutional diseases. Hence a description and classification of headache with suggestions as to the means of determining its causation must prove of great practical value. According to many modern observers, we know almost nothing of the structures in which the pain of headache is felt or of the mechanism of its production. As the meninges, especially the dura and a large area of the cranium, receive their sensory supply from the terminal sensory branches of the trigeminus, and as the meninges are also supplied by branches of the sympathetic nerve, it is reasonable to assume that headache is the result of direct or indirect irritation of these nerves.

Psychical disturbances, in the form of depressing emotions such as grief, worry, fright, etc., often produce headache; in such instances it must be due to processes originating in the higher cerebral centres through which superficial pain is perceived. Headache must not be confounded with true neuralgia in which the pain is paroxysmal in character and directly limited to the course of the nerve and its distribution. The idea that the location of the pain in any particular region of the head is always directly related to some special underlying, adjacent or remote pathological process (excepting pericranial inflammation), has not been substantiated by clinical experiences.*

No definite rules can be laid down in regard to this matter that will apply in every case. It may be said, however, after perusal of the histories and observation of a large number of cases, that pain located at certain parts of the head occurs more often in this or that condition of disease. Such information, nevertheless, may

* Recently, Head in his work on "Referred Pain" has endeavored to prove the existence of certain sensitive areas on the scalp in their relation to diseases of internal organs.

prove valuable in suggesting certain lines of inquiry when found associated with other symptoms.

The headache may be confined to the forehead, to the vertex, the parietal, temporal, or occipital region on one or both sides; it may be unilateral as in migraine, or it may affect the entire head, and is then described as general or diffused, or it may occur in various combinations.

Patients usually describe the pain in the head, which frequently dominates all other symptoms, as acute, sharp, throbbing, darting, dull ache, boring, burning, stabbing, etc. It may be transient, paroxysmal, periodical, or continuous, and may vary in degree and location from time to time. As pain is a subjective symptom we can judge of its degree only by the *tout ensemble* of the individual and by its association with unmistakable physiognomical expressions and physical manifestations.

Traditional psychology may be said to regard pain as a feeling, *i. e.*, a purely mental state or condition, with or more frequently without a physical basis in the nervous system. Physicians do not place much confidence in the patients' statement of the quality or character of the pain, largely because patients have not words, nor experience to prompt the words, in which to describe their pains. The description of pain by a patient seems to be directly proportional to (1) liveliness of imagination, (2) vocabulary, (3) experience" (Witmer). The description is often materially enhanced by the patient's gestures.

HEADACHE, for all practical purposes, may be divided into two classes—functional and organic. The so-called functional forms of headache are by far the more frequent, and include those resulting from various constitutional or psychical disorders, and from causes not situated in the skull or cranial cavity, excepting the disturbances of special-sense organs, such as the eye, ear, and nose, and dental caries. Some special forms of disturbance of the cerebral circulation may also be placed in this category.

The organic form includes all types of intracranial disease, whether vascular, meningeal, or cerebral, and disease of the cranial bones.

The functional forms of headache may be classified and subdivided as follow:

- | | | | |
|------------------|---|-------------|--------------------|
| TOXÆMIC. | 1. Retained excrementitious substances. | | |
| | 2. Products of defective metabolism. | | |
| | 3. Infectious germs or their toxins. | | |
| | 4. Various drugs. | | |
| | 5. Graves' disease. | | |
| NEUROPATHIC. | 1. Neurasthenia. | | |
| | 2. Hysteria. | | |
| | 3. Epilepsy. | | |
| REFLEX | 1. Ocular. | 2. Gastric. | 3. Nasopharyngeal. |
| | | | 4. Auditory. |
| | | | 5. Dental. |
| | | | 6. Uterine. |
| | | | 7. Sexual. |
| CIRCULATORY. | 1. Hyperæmia: | 2. Anæmia. | |
| MIGRAINE. | | | |

TOXÆMIC HEADACHE.

In which the blood is contaminated by various deleterious agents.

1. **RETAINED EXCREMENTITIOUS SUBSTANCES.**—(The absorption of decomposition and fermentation products developed in the alimentary canal, or the reabsorption of retained excrementitious substances.) (a) Constipation. (b) Intestinal indigestion. (c) Gastric indigestion. (d) Uræmia.

(a) *Constipation*; (b) *Intestinal Indigestion.*—In a very large majority of instances in which headache is complained of, it is due to toxæmia resulting either from constipation, or from intestinal or gastric indigestion. The clinical fact has long been established that auto-intoxication of intestinal origin plays an important rôle in the production of headache, migraine, and vertigo, but such symptoms are evidently more or less dependent upon individual susceptibility. Constipation is not incompatible with apparent health, for some persons may be constipated for a week or more at a time without any complaint of digestive trouble or headache. For this reason, the

objection has often been made to the hypothesis of auto-intoxication of fecal origin. On the other hand, Bouchard, who has made a special study of this subject, believes that constipation should be regarded as a protection against intoxication, and says: "it supposes that all that is absorbable has been absorbed, the aqueous part with what was held in solution." The lengthiest argument, however, will not controvert the familiar fact that thorough purgation causes the rapid disappearance of the headache and associated symptoms in most cases of this character.

In these patients the headache is usually located in the frontal region, but is often diffused over the entire head. As a rule, it is not constant, and may or may not be associated with gaseous eructations.

In some it is accompanied by morbid somnolence during the day and heavy sleep at night, while in others insomnia is complained of. Occasional attacks of vertigo may also occur.

(b) *Intestinal indigestion*, with or without constipation, is more frequently productive of headache through auto-toxæmia than as a supposedly reflex cause. The urine is often of high specific gravity and may contain an excess of indoxyl.

(c) *Gastric Indigestion.*—It would seem that gastric indigestion, on the other hand (although in some instances occasioning toxic absorption), is more likely to produce headache by reflex irritation through the pneumogastric nerve from fermentation of food and gaseous distention of the stomach. Thus, headache, possibly due to both causes, is frequently an accompaniment of dilatation of the stomach on account of the anomalous fermentations that are the consequences of it. The location of the headache is usually supraorbital or frontal.

(d) *Uræmia.*—Headache due to renal disease is of very common occurrence. Two forms are found in nephritic subjects—*uræmic* and *congestive*. Either one or both may be present in the same patient. The *uræmic* form is due to the retention in the circulation of excrementitious products, and may manifest itself in any type of kidney disease, whether acute or chronic. The pain is ordinarily situated in the occipital region, extending to the neck. It may or may not be associated with somnolence, nausea, or vomiting, etc., according to the degree of damage to the kidneys and arterial system. In some cases the headache may be accompanied by vomiting, vertigo, and optic neuritis, thus simulating the general cerebral symptoms of brain tumor. The *congestive* form arises in consequence of disturbed cerebral circulation in the presence of cirrhotic kidneys, with arterio-sclerosis, cardiac hypertrophy, and increased arterial tension. (See "Circulatory" form of headache.)

Puerperal Eclampsia.—Headache which is at times persistent and severe is often a premonitory symptom of a convulsive attack in this affection, and may be associated with delirium, excessive somnolence, mental hebetude, or insomnia. (Edema of the face and extremities is often present. This condition is generally regarded as acute renal disease of pregnancy, the headache and other symptoms being ascribed to some form of toxæmia not yet determined. Unless the urine is carefully analyzed, and the functioning power of the kidneys ascertained beyond question, the uræmic form of headache will often pass unrecognized, thus leading to unexpected and serious consequences.

2. **PRODUCTS OF DEFECTIVE METABOLISM.**—(a) Rheumatism. (b) Gout. (c) Diabetes.

(a) *Rheumatism.*—There are two forms of headache which occur in rheumatic subjects. One is due to auto-toxæmia, the headache generally being diffused and similar to that occurring in other forms of toxæmia. The other is a true muscular rheumatism or myalgia located in the scalp and affecting particularly the occipito-frontalis muscle and its aponeurosis. The pain is increased by active or passive movement of this muscle, and it is common to obtain a history of other attacks of muscular rheumatism, affecting different parts of the body. These patients may also have suffered from acute or subacute articular rheumatism. The attack may last for from a few