the immediate to a study of remote causes, which are the chief factors oftentimes in producing the result in the individual he is called upon to treat. Upon us rests the responsibility of pointing out these far-reaching influences, and herein is the most encouraging field for the exercise of our talents as promoters of the welfare of humanity.

It is true, as has been clearly set forth in the paper, that man, in his evolution to the point of greatest efficiency, can only attain that end by healthful exercise of every faculty. Man's constitution is a trinity composed of *physical*, *mental* and *moral* faculties. The perfect man is the product of these three acting harmoniously and carried to the degree of their highest possible development. They constitute a tripod on which the superstructure, when symmetrically built, rests securely. And in the process of development toward the perfect man no one of the three pillars, upon which the final result depends, can be ignored. To neglect the physical, the mental or the moral faculties of his nature; to cultivate one at the expense of the other; to fail to observe the interdependence of the one upon the other, will produce a greater or less degree of deformity, and not the perfect man. The central nervous system is the organism upon which the development of these faculties depends, and by means of which they find expression. The growth of the normal structure and function go hand in hand. What then, we should ask ourselves, are the causes, the influences at work in the race and in society; what are the conditions necessary for obtaining perfection in the harmonious development of man's threefold nature?

These are legitimate subjects for the thoughtful consideration and research of every physician who attempts to enlighten his fellow-man as to the laws to which his nature is subjected, and the forces that affect his well-being in its entirety. And such responsibility rests upon the neurologist and alienist, perhaps to a greater degree than upon any other class of practitioners of the healing art. In him do we expect to find a storehouse of all truth, so far as discovered, which has a bearing upon the evolution or dissolution of man's brain. What then is the value of the discussion of this or that agent in the pharmacopœia in some particular disease, as compared with a study of these principles, which underlie an entire class of pathological conditions?

There is at the present time a strong conviction among neurologists, which is shared by others in the medical profession and by thoughtful men and women among the laity as well, that the man addicted to the use of alcohol in excess is a sufferer from disease; that his brain has undergone functional, if not structural, change, which renders him as incapable of self-control as the idiotic or the insane, and that this condition of irresponsibility is not confined alone to those

times when his blood is saturated with alcohol from recent indulgence or debauch—but that during the intervals of drunkenness he is incapable of acting as a sane man, and should therefore be dealt with, not as a criminal to be turned over to the police only in some fit of bacchanalian excess, but is at all times, until pronounced cured by competent judges, a fit subject for the hospital or the asylum.

This and other social problems of no less import and wide-reaching applications, come within the legitimate range of our purpose; are rather the most vital questions for discussion by the members of this Section, and the paper which has just been read points out the road along which, as a company of specialists, we can do the greatest good to our fellow-men.

Dr. Hughes said he desired to express his appreciation of the worth and excellence of the paper. He was glad to see papers of this kind brought before the Section. Formerly physiological psychology was a subject that emptied the room, but this to a great extent had been changed by Maudsley and Spencer. These writers had attracted general medical attention. Papers of this kind will do much to settle psychological hygiene for both the individual and society.

THE VIRILE AND OTHER NERVOUS REFLEXES.

Read before the Section of Medical Jurisprudence and Neurology, at the Forty-second Annual Meeting of the American Medical Association, held at Washington, D. C., May, 1891.

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In a previous communication on this subject (*vide Alienist and Neurologist* for January, 1891), I have called attention to the fact that in a perfectly healthy individual, whose spinal cord is entirely normal, especially in its genito-spinal center, placed supine on a couch without head-rest, nude about the loins, the sheath of the penis made tense by claspings the foreskin with the left index finger and thumb at about the place of the frænum, and pulling it firmly toward the umbilicus, placing the middle, ring and little finger low down upon the dorsum of the virile organ, the dorsum or sides of the penis, near the perineal extremity, then sharply precussed, a quick and very sensible reflex motor response or retraction of the bulbo-cavernous portion will be felt to result from this sudden percussional impression, like that which follows, though less pronounced, in the testicles, after sensory irritation of the inner aspect of the thighs, and known as the cremasteric reflex, with this difference only, the cremasteric reflex is a sudden upward movement of the testicle of the side irritated,

while the virile reflex is a sudden downward jerk. While this reflex, like all reflexes with which I am familiar, is away from the irritating afferent impression, it is in marked contrast with the patellar tendon phenomenon in being away from the heart instead of toward it, as so many reflex movements are. It differs from the ordinary penile erection, and must not be mistaken for it (for it cannot properly be called an erection) in this respect, too, viz., that it is downward, and not upward, and proceeds always from a peripheral and external irritation; whereas, erections more often proceed from direct central (cerebral) impression proceeding downward and outward.

Its action corresponds to the œsophageal reflex, or reflex for swallowing.

This reflex symptom is of important clinical and physiological significance, as will later on be shown.

I have called it the virile reflex, because I think, if properly sought for, it will be actively present in all healthy adult males with normal spinal cords; at least, I have so found it in all. It is absent in infants, and feeble or absent in male children who have not attained the age of puberty.

A number of years ago I ventured the assertion that the absence of the cremasteric reflex would be found of significance in the determination of impaired virility from sexual excess or masturbation. This, subsequent experience has only confirmed. Now this new sign—the virile, the penis percussion reflex, or, as M. Ounanoff calls it, the bulbo-cavernous reflex—present, impaired or absent, gives us another valuable evidence of the vigor, impairment, loss or abeyance of the sexual powers in man.

After prolonged excessive venery it becomes impaired or disappears, to return again with sexual recuperation.

After excessive masturbation, long continued, with accompanying neurasthenia, I have found it impaired, but seldom entirely absent in young subjects. It is not impaired in masturbation when the habit has destroyed the sexual power. It disappears in some cases of chronic meconism, and becomes abeyant in long and beastly intoxication, though often excitable in acute alcoholism. This subject needs further investigation.

It is lowered and abeyant in the later stages of typhoid fever, and I have found it also in the moribund state. I have found it absent in old men who have acknowledged and sought treatment for entire virile incapacity.

It is often, but by no means uniformly, found in sympathy with the other reflexes in spinal cord disease of the lumbo-dorsal spine, as the quadriceps extensor femoris tendon reflex, the anal, vesical and cremasteric reflex, the Achilles reflex, ankle clonus, etc.

This phenomenon may also be elicited by sud-

denly jerking the foreskin after it has been made tense, or by pinching the theca of the penis when it is in this stretched condition. This reflex may be reinforced like the knee phenomenon, but by a different process, viz., the frictional excitation of the glans and body of the organ by means of a brush, or brushing it briskly with a piece of paper. It may also be evoked by electrical excitation, a kind of clonus sometimes appearing after this form of irritation. As I said in my first communication, some skill in palpation—a sort of tactus eruditus—is necessary in examining for this sign, the characteristic jerking back of the bulbous urethra within the sheath of the penis being felt only when carefully sought for. It is not ordinarily to be seen.

I have found the sign absent in cases like the following: Pupils unequal, patellar reflex exaggerated, and other evidences of sclerose in plaques, with history of syphilis, and acknowledged feeble virility, and diagnosis by a competent ophthalmologist of optic atrophy. I believe it will be found to be quite generally absent when there is optic atrophy, unequal pupils, and other evidences of cerebral sclerosis, or multiple cerebro-spinal disease of this nature. I have found this sign absent in the status epilepticus, but not necessarily modified in hemiplegia, and exaggerated in cerebral paraplegia.

The following clinical records, made since my first report on this subject, add additional confirmation to the significance of this sign:

Case 1.—Mr. J. B., aged 23, single, locomotive fireman, first presented himself for treatment at my office July 11, 1891, when I obtained the following history: Some three years ago, in alighting from his locomotive running at the rate of 15 miles an hour, he sprained his back, but it did not give him much trouble at that time. About three weeks ago, while perspiring freely, he “caught cold” and the perspiration suddenly stopped—from this patient refers present trouble, though he had an attack of la grippe in February, and about latter part of April, he noticed impairment of motion of right leg. Some four years ago he indulged in sexual intercourse to excess—upon one occasion, had connection seven times in twenty-four hours. He has had no inclination for sexual intercourse lately, thinks he has had sexual desire but about a half dozen times during the past two years.

Bowels constipated, for which he resorts frequently to purgatives. Had an attack of vertigo to-day, and fell to the floor while in the act of yawning. Pulse (sitting) 66; upon slight exertion (walking about the room), pulse increases to 78. Right knee-jerk abnormal; R. quadriceps clonus marked up to origin of muscles—a slight tap below right patella (not sufficient to produce patellar reflex), will cause quadriceps muscle to vibrate. R. knee response below normal, left

knee-jerk impaired, no quadriceps clonus. R. gastrocnemius reflex normal; R. plantar and solar reflexes exaggerated, and clonus follows reflex excitation; plantar surface of right foot hyperæsthetic. Flexion of right foot incomplete one-half, rotation impaired one-half, flexion and extension impaired about one-half. While sitting, he can only lift right leg and thigh about three-fourths as compared to left. Has head and back ache. No spinal tenderness, tender over crest of right ilium and beneath ribs of right side.

Æsthesiometric tests of finger tips give normal results. Numbness of left great toe, but no abnormal æsthesiometric sign. Has slight right scrotal hernia; has phimosis.

Virile reflex impaired, extremely feeble, and elicited with difficulty. Patient put upon the following treatment:

R. Quinæ bisulphatis, drachm ij.
Ext. nucis vomicæ, gr. xij.
Ergotine, scrup., ij.
Ext. belladonnæ,
Aloin (Merck), ãã gr. iij.
Liq. potass. arsenitis, gtt. xv.

Misce, et fiat cap., No. xxxvj.
Sig. One three times a day.

R. Sodii bromidi, oz. iss.
Aq. menth. pip., q. s. ad. oz. vj.
Misce, solve, et Sig. Tablespoonful at night.

Patient reported some three times at intervals of a week, and a marked improvement was observed. He then left on a trip, to return unless the improvement continued uninterruptedly, and I have not heard from him since.

Case 2.—Mr. Chas. E. H., 21, occupation farmer, single, applied at my office for treatment August 15, 1891, and gave the following history: About a year ago, he slept on the damp ground for five successive nights, each morning he felt stiff, and head was very sore. As the effect of this, he was sick in bed with fever for a week or more, legs were paralyzed, bowels constipated, and urine retained—was catheterized several times. He was attended by two local physicians. Says he suffered severe pain during first three weeks of illness, and was troubled with erections. Patient's present condition is as follows: Pulse 90 (patient sitting) and full, temp. 100° Fah., appetite and digestion good, and sleeps well; no erections at present. Some pain in lumbar and sacral region. Crosses right leg over the left with difficulty, cannot lift leg without the assistance of hands, cannot stand alone. Patellar tendon reflex is absent, virile reflex present, but impaired, cremasteric reflex normal, and has abdominal reflex. Has never had syphilis, or any zymotic disease.

Patient placed upon the following treatment:

R. Quinæ bisulphatis, drachm ij.
Ext. nucis vomicæ, gr. vj.
Ext. ergotæ, gr. xxiv.
Fowler's sol., gtt. xl.

Misce. Tiat. cap. No. xxiv. Sig. Take 2 capsules three times a day—in the morning, after dinner, and at bedtime.

R. Sodii bromidi, oz. iss.
Kalii iodidi, oz. ss.
Syr. Hypophos. comp. (Fellows'), oz. iv.
Liq. pot. arsen., dr. j.
Aq. menth. pip., ad., oz. vj.

Misce. Solve, et Sig. Teaspoonful in the morning and 2 teaspoonfuls in the evening.

I select and epitomize a few cases from my earlier records as follows:

The first three were middle aged, of these, the first was married, and gave a history of syphilis, brewer by occupation, erections feeble, white atrophy of retina, unequal pupils—left larger than right, vision obscure in both eyes, cerebrospinal sclerosis (multiple and lateral).

The second gave a history of former syphilis, though at time of observation he was in good flesh and general health excellent, miller and merchant, lives in country; impotent—seldom has erections, but at times has good erections and completes the sexual act.

The third is impotent, fails to have erections.

The next two are children under twelve years of age; of these, the first is a country boy and has epilepsy mitior, the second, also a country boy, has epilepsy gravior.

Another case was that of a civil engineer, single, aged about 28, with nocturnal epilepsy from excessive masturbation.

Additional experience since the discovery of this important diagnostic sign only confirms the conviction uttered in my first paper, viz.: It should receive further consideration at the hands of neurological clinicians, for it appears worthy a place in clinical neurology with Westphal's paradoxical contraction, Erb's reaction of degeneration, or any of the hitherto recognized diagnostic reflexes, or clonuses.

I have found an analogous reflex to this phenomenon in healthy females.

It may be elicited in normally vigorous persons when that condition of the organ is present that we find coëxistant with a desire for coitus, when the sexual act is about to commence, and shortly after coitus, if the sexual desire has not been gratified to satiety. It can be evoked during priapism, and during penile relaxation, if power for a second coitus remains in the organ.

In conclusion, I think we are on the verge of further most important discovery in the direction of physiological and pathological reflex phenomena, and on the verge of an enlarged comprehension of their value in diagnosis and prognosis. I believe that every part of the body supplied by an afferent (sensory) nerve communicating with a center, whether cerebral, spinal or ganglionic, capable of an efferent or motor response, will be found susceptible under appropriate stimuli (electrical, mechanical, or special) in normal or pathological state, responsive in some way, and that

this plus or minus responsiveness is yet to have far more remarkable value in clinical estimation than is now accorded it or dreamed of in medical minds. For instance, in our clinical investigations, we take into consideration such purely physical reflexes (in addition to the cardiac and visceral movements) as the palpebral, pupillary, naso-pharyngeal, vesical, cremasteric, anal, and the tendon reflexes of the lower and upper extremities, normal and abnormal, and the clonuses which are of the nature of reflex phenomena prolonged into rhythmical movements.

Many of these are more or less influenced by conditions of psychical inhibition.

Then we have in disease often to consider the state of the psycho-physical reflexes, as the involuntary shedding of tears, unintentional, or causeless weeping, involuntary and unsuppressable laughter, shouting, involuntary exclamations of various kinds, as of fear, disgust, joy, etc., and sudden involuntary and unrestrainable psychomotor responses of various kinds, virile erections under erotic psychical impressions. These latter are downward influences, reflex responses from psychical excitation through peripheral impressions transmitted through sight or other senses, or originating altogether in ideational center. Then we have the psychical responses to peripheral impressions, such as the sudden mental states and expressions following physical impressions, like the immediate outcry of peripheral pain—the true nature of a reflex phenomenon wherever we find it being a peripheral impression transformed into an immediate, or almost immediate, motor response or expression.

If we take into consideration how much of our power for regional diagnosis has been aided within the past few years by what we already know of these reflexes, especially of the knee jerk, Achilles reflex, the foot clonus, the anal, vesical, cremasteric, and virile, how much more may we not hope for with confidence, if we but persevere in our search for yet unknown manifestations of these phenomena? I have already elicited in certain moribund states, an oral reflex, as heretofore announced, and a physiological anal reflex; and have confidence even before its announcement, not knowing it was new, much that Rosolimo asserts concerning the reflex of the anal sphincters, this latter reflex serving as an especially valuable differentiating test where sexual failure is to be early distinguished from commencing vesical or rectal paralysis.

A CHEAP DISINFECTANT.—The nitrate of lead is the cheapest disinfectant known that fulfils its intent. It does not, however, prevent putrefaction. The chloride of lead is much more effective in all directions. It is made by dissolving a small teaspoonful of nitrate of lead in a pint of

boiling water; then dissolve 2 full teaspoonfuls of common salt in 8 quarts of water. When both are thoroughly dissolved, pour the two mixtures together, and when the sediment has settled you have 2 gallons of clear fluid, which is the saturated solution of the chloride of lead. A pound of nitrate will make several barrels of the liquid. The nitrate of lead costs from 18 to 25 cents a pound at retail.—*Med. Bulletin.*

THE JOURNAL OF BALNEOLOGY.—It is announced that Dr. J. N. Bell, of Brooklyn, Dr. Frank Woodbury, of Philadelphia, and Dr. Geo. H. Rohé, of Baltimore, are to be the editors of this journal, in the departments of balneology, dietetics, and climatology, respectively.

PULMONARY TUBERCULOSIS TREATED BY HYPODERMIC INJECTIONS OF ARISTOL.

On Sept. 15, 1891, M. Herard read before the Paris Academy of Medicine, a report by Dr. Nadaud, upon this subject. An abstract of it is printed, as follows, in *La Semaine Medicale* (No. 46):

After having observed the excellent effects of Aristol upon scrofulo tuberculous lesions, and found that Aristol was perfectly innocuous in internal medication, M. Nadaud decided to make use of hypodermic injections formulated as follows:

Oil of sweet almonds (sterilized) 100 c.cm.

Aristol 1 c.cm.

The solution should be filtered.

Nadaud's first injections were made upon a child, æt. 7 years, who, after an attack of coxalgia, had developed several abscesses followed by fistulous tracts. One cubic centimetre of aristol was injected daily. After twenty-five days of treatment there was no trace of suppuration to be seen.

In consequence of this result, Dr. Nadaud decided to test the value of hypodermic injections of aristol in the treatment of pulmonary tuberculosis.

Twenty-three patients suffering from tuberculous lesions of the lungs were successively treated by injections of aristol without any other medication whatever.

In seven cases the amelioration was so great as to induce the belief that complete cures had been effected. The treatment covered from twenty-five to thirty days. The amelioration has continued up to the time of this writing, *i. e.*, from three to four months.

In five of the twenty-three cases there was a prompt amelioration, but, a month after the cessation of treatment, some symptoms were observed which seemed to call for a second series of injections. Generally, the relapse was of slight importance, and the patients in this category soon resumed their habitual occupations. In no case was it necessary to make a third series of injections.

The rest of the cases are still under aristol treatment.

In concluding his paper, Dr. Nadaud said: The effects of aristol are promptly observed usually on the sixth or seventh day of medication and are first manifested by a diminution of the cough and a suppression of the night sweats.

After twenty or twenty-five days of treatment we generally find that the patient has increased in weight.

Aristol gives its best results in the first and second stages of pulmonary tuberculosis. The injections do not cause inflammation, irritation, abscess, eschar, or induration.