

sound degenerative brain. They further urged that the cool preparation for the crime and telling what he was going to do, committing the act in broad daylight where he was seen by others, was clearly insanity. Such conduct following excesses in the use of drink, could not come from a mind sane and conscious of the acts committed. The counsel for the defense, Messrs. Hull, of New London, and Thayre, of Norwich, urged that there was more than reasonable doubt of the soundness of the prisoner's mind at the time of the commission of the crime. Also that his excessive drinking before the crime would of necessity so impair his reason and judgment that any unusual acts would be more or less insane and be committed without conscious reason. They urged that this crime in its boldness and strange premeditation and execution, and his delirious condition after, was strong proof of insanity. The experts for the defense affirmed that the man at the time the crime was committed was suffering from alcoholic dementia, and when confined had an attack of delirium tremens, from which he recovered with an enfeebled demented brain, and at present is in a low parietic condition.

The verdict was manslaughter and imprisonment for life. This was a rational modern disposition of the case.

Both of these cases were alike in the well marked evidence of imbecility due directly to alcohol. In the Cronin case, the heredity intensified and made the degree of degeneration very clear, and placed the assumption of insanity and unconsciousness without power of control, beyond all possible doubt. In the latter case, Donovan's conduct before and during the commission of the crime and after, clearly indicated the impossibility of mental soundness. Neither of these cases were able to reason rationally, or to form motives and to act upon them with reasonable consciousness of their import and consequences.

The hanging of Cronin ignored all modern facts concerning the brain and its disorders, and was a reversion to the theories that prevailed two centuries ago. Donovan's sentence recognized the dawn of a new era in jurisprudence, and progress along the lines of development, with clearer conceptions of the relations and limits of responsibility.

BLISTERING BY SUGGESTION.

Read before the Chicago Academy of Medicine, Jan. 11, 1895.

BY H. C. B. ALEXANDER, M.D.

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As early as 1840 Dr. Lewis Prejalmini with "magnetized" paper produced the effect of cantharides. As Bjornstrom remarks, suggestion not "magnetized" paper caused the blistering. Bjornstrom demonstrates that, by suggestion, congestion may be produced, carried to raised swelling of the skin, to a blister like that of cantharides, to bloody transudation and even to complete formation of a wound. Charcot and his pupils thus produced all the phenomena of burns. Beaunis hypnotized a susceptible subject, told her that upon awakening she would have a red spot under her forearm which he tapped slightly but so as to avoid redness from pressure. Ten minutes after awakening there was evident redness at the place touched which increased in size, was visible about twenty minutes and then gradually disappeared. By suggestion Beaunis could cause the

mark to remain forty-eight hours. Facachon informed a hypnotized susceptible subject that a topoalgic spot would be blistered by cantharides. The next morning pain had vanished and blebs full of serum were present. He cured a right clavicular topoalgia in the same subject by suggestion, during hypnotization, of an actual cautery with the seeming result of a burn. The experiments of Charcot and his pupils in the same direction have had almost identical results. Beaunis made several experiments on Facachon's subject. May 12, 1885, she was hypnotized at 11 A.M.; on her back at a point unreachable by her hands, a strip of eight gummed stamps was fastened. A similar strip had been eighteen hours on another arm without effect. Over these a compress was placed and the subject thrice told that cantharides had been used. She was closely watched during the day and hypnotized at night with instructions to awake at 7 P.M. At 8 A.M., Facachon removed the compress in presence of Bernheim, Leibault, Leigeois, Beaunis and others. When the stamps were removed the underlying skin over about five centimeters was thicker, yellowish, white and inflamed but without blistering. Half a centimeter of surrounding skin was intensely red and swollen. The spot was covered with a dry compress; three hours later the spot had the same appearance and was photographed one hour thereafter. The photograph showed about five blisters. They increased, secreted serum and later suppurated. Later, the arm of the same subject was blistered in like manner.

Another subject suffered greatly from topoalgia. Facachon blistered her by suggestion, below the left ear and on the left temple. Facachon made cantharides inactive in the first subject by suggestion. Having by experiments on a second person, determined that his cantharides blister was active, he used two of the three parts of the same blister on his subject. The third part had been applied with due effect upon a patient needing counter-irritation. The subject was hypnotized; one piece of the same plaster placed on the left arm and the other on the right. The subject was told that the left arm would not blister, while the right would. Nine hours later when the bandages were removed the left arm was normal, the right blistered. My own case occurred in an hysteric in whom the neuropathic element was partly the result of environment. One evening a cutting from a roll of belladonna plaster was placed over a topoalgic spot on the neck. The same roll of plaster had been used on other patients without dermic effect. A decided blister, however, appeared under the plaster. At the outset while the possibility of untoward effects was taken into consideration, it was thought more probable that the blister was due to auto-suggestion, as the patient believed that the object of the plaster was to blister. The blister healed rapidly under lanolin dressing and suggestion. A control experiment was made. Cantharides was applied about 9 P.M., on a new topoalgic spot of which the patient complained without effect; the patient having been assured that it was simply a pain curing plaster. The spot remained free from redness until about 9 A.M. the next morning, when an incautious remark of the nurse led the patient to surmise that a real blister had been applied, and in an hour, wheals followed by vesicles appeared and disappeared. The patient had been meanwhile informed that the nurse

had unadvisedly used the term, blister. The cantharides plaster was carefully tested before being used. The chief value of the present case lies in its control experiments. The patient, while obviously in a condition extremely susceptible to suggestion, at no time was in the true hypnotic state.

These cases and those in which bleeding occurs at written points in dermatographic subjects, explain the cases of stigmatization which from time to time appear in religious communities and of which the latest case was reported by Dr. M. F. Cooney as having occurred in Kentucky. In many of these cases the influence of suggestion is evident, from the fact that the side wound of Christ occurred on the right side in lieu of the left, because of the ignorance of the stigmatized subject.

THE NON-TOXICITY OF UREA.

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Urea being the final product of tissue metamorphosis and apparently playing no rôle whatever in our economy, it was natural to consider it a waste material, of which our system should rid itself. Finding this material diminished in various affections it was *a priori* considered that the system must be overloaded with this effete material, urea.

That urea is even yet considered a toxic body by many, is apparent from the numerous articles attributing toxic effects to this substance. The recent article by Dr. J. Nelson Teeter, on "The Relation of Urea to Epilepsy," which appeared in the January number of the *American Journal of Insanity*, has caused me to write my observations and experiments in regard to the toxicity of urea.

Perhaps no one has done more toward fathoming the mysterious depths of auto-intoxication than has Bouchard; to him my experiments are due, nor do my experiments differ from his, but prove to my satisfaction that his conclusions are justifiable, *i. e.*, that urea is not a toxic substance—or rather is not toxic in the quantity found in any known pathologic state.

My first experiment was to inject into the vein of a rabbit weighing 1.247 kilograms, 2 grams urea in fifty c.c. water. The animal showed neither stupor, somnolence nor convulsions. Since the solution was injected directly into the vein, it was not possible for the urea to have been eliminated as rapidly as it was absorbed. Supposing 1 kilogram of animal to form .4 grams urea—which is the amount normally ascribed—this animal would normally have formed in twenty-four hours only .498 grams, but we injected 2 grams which is four times the amount formed in twenty-four hours; this animal could have retained the entire amount of urea formed in four days and suffered no ill effects. Accordingly, man could retain with impunity four times the amount of urea formed in twenty-four hours. Since he forms say 32 grams per diem, we would have 32×4.128 grams, which is over four ounces. The conclusion must then be that the various phenomena attributed to the poisonous effects of urea are not due to the same, but probably some other body.

I have repeated the experiment, with some increase in the amount of urea, and find in order to kill 1 kilogram of animal it is necessary to use 6 grams of urea. A man of medium weight, say 60 kilograms, will then

require 360 grams to produce death. A man of this weight should form 24 grams urea in twenty-four hours; but we have shown it would take 360 grams to poison him, which is fifteen times more than he forms in twenty-four hours; therefore that his death should be due to retention of urea, he would have to retain the entire amount of urea fifteen days. These experiments show conclusively that urea, contrary to what is generally believed, is but feebly toxic.

In double calculous obstruction, uremic (so-called) accidents occur on the second or third day, but according to the above observation, the person has formed at this time only one-eighth of the amount of urea necessary to cause death.

According to Bouchard, urea is a diuretic. While, then, this product of disassimilation causes the kidney to secrete, it not only makes its own escape, but likewise removes other waste material from the system. In cases of hepatic uremia, where there is not sufficient urea, or in cases of some pathologic state of the kidney, upon which urea can no longer act, we find as a result a diminished amount of urea, and as a result of this deficiency of nature's diuretic, an overloading of the system with various other substances; and to these we must look as the cause of intoxication.

Although urea in itself is not a toxic body, the value of a quantitative estimation of urea is not to be lost sight of; for since this is the substance which forces the renal barrier, it necessarily follows that if the urea be diminished we must find other waste material diminished in proportion, thus making the quantity of urea a criterion, to a certain extent, of the toxic matter retained within the system. I have under observation cases of insanity undoubtedly caused by an auto-intoxication, in which the urea is at times reduced to 9 grams per diem, this showing to my mind that the toxic materials are retained in the system in some proportion at least to the urea.

A NEW OPERATION FOR THE RADICAL CURE OF HEMORRHOIDS.

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A few years ago the surgeon who had before him a case of hemorrhoids found himself between the devil of ligation and the deep sea of the actual cautery. But in the great "onward march" of surgery this particular field has not been overlooked, and to the specialist there are few cases not amenable to some form of treatment.

When Dr. Whitehead gave to the profession the "Whitehead operation for the radical cure of piles," much was said for and against it. Then Dr. Pratt introduced the famous "American operation." Both are too familiar to require description, and both have much to recommend them, as well as much that invokes criticism. It would seem that in the simple operation of destroying a few hemorrhoids, there would be little room for difference of technique, yet how often a slight change in the *modus operandi* will simplify and render easy a once difficult problem, at the same time giving better results.

It is my purpose to describe an operation, which, by virtue of its simplicity, is preferable to either the Whitehead or the American, in cases where either of the latter are indicated.