were extreme anæmia, intense spinal irritability; no organic disease. No treatment seemed to do good. On June 20th, 1878, some freshly drawn milk (temperature 100°) was injected by Dr. Hunter, by means of a tube and funnel and sharp-pointed cannula, into a vein of the arm. Twenty grains of quinine were administered previously to the operation, with the view of counteracting the effects of chill. The funnel was held twenty inches above the arm. The first effects were violent capillary injection of the face and surface of the body. The eyes were prominent and injected; the lips became turgid, and the whole expression wild and alarming. There was laboured respiration, with intense depression. The patient clutched at her throat in distress. The funnel was therefore lowered; and, when the patient became easier, it was raised again. Eighteen minutes after the operation, urticaria appeared, the wheals being large, and pale-reddish in colour. This disappeared, but reappeared in ten minutes. The pulse at the time of the operation was 108; in five minutes, 150; then it fell to 128, at the time of the appearance of the urticaria. The pulse was 92 twenty minutes later; for several hours it remained at 95. She had a good night. The next day, the woman was in her normal state. The urine was normal. The operation was repeated on June 27th, and again on July 17th, with decided improvement as the result.

The second case was one of progressive anæmia in a sailor, aged 33. The corpuscular richness of the blood (by Malassez's method) was just over 25 per cent. of the normal. The proportion of white to red corpuscles was about 1 to 643, that is, reduced. On June 15th, 1878, at 12.35, six ounces of milk were injected into the left median basilic vein. The first effect was flushing of the face, fullness in the head, vomiting, and a desire to defæcate; breathing was not much embarrassed. At 1.40 there was a chill, lasting twenty minutes. Hot bottles were ordered, and ten grains of quinine, and a fourth of a grain of morphia. At the time of the operation, the temperature was 99.4°, pulse, 104. At 8 p.m., the temperature was 100.4°; the pulse 94, and much fuller. On June 16th, he had slept well and felt stronger; temperature, 99°; pulse, 98. There was no albumen in the urine. He was stronger, and walked about better. On June 20th, at 11.20 a.m., eight ounces of milk were injected into the right median basilic vein, at a temperature of 100° Fahr., twenty grains of quinine having been administered previously. The injection occupied five minutes. The pulse fell from 135 to 114, and became stronger. At 1 p.m., there was a chill, lasting twenty minutes. The temperature rose to 103°. He was ordered ten grains of quinine, and soon the temperature fell. On June 21st, he had an easy night, and was stronger. There was much albumen in the urine, which disappeared the following day. On June 27th, six ounces of milk were injected. The usual train of symptoms followed, and a chill lasting twenty-five minutes, and, for fifteen minutes, absolute blindness. On June 28th, the urine contained albumen and phosphates. Morning temperature, 102° Fahr.; evening, 104° Fahr.; pulse, 120. He was ordered ten grains of salicylic acid, every three hours. On June 29th, he passed ten pints of urine in twenty-four hours (compare the polyuria of Moutard-Martin and Charles Richet); and the urine contained albumen. Death occurred on July 1st. A necropsy showed that the heart was flabby, and presented marked fatty degeneration. The lungs were adherent, and there were cheesy nodules in the apex of the right lung. There were no metastatic abscesses, but the lower lobes of the lungs were congested and cedematous. Small collections of pus were found in the right elbow-joint. The suprarenal capsules were mere sacs. There was slight thickening of the connective tissue of the kidneys. The marrow of the long bones showed alterations of the kind found in medullary anæmiosis. Dr. Pepper concludes that, in "this case of progressive organic anæmia, the intravenous injection of milk did no good. After the first operation, there was temporary improvement, but, after the last, grave symptoms ensued; and it cannot be doubted that the result was hastened by the operation."

From the physiological, experimental, and clinical evidence combined, the following conclusions may be drawn.

1. The intravenous injection of a small quantity of newly drawn milk is harmless.
2. Large injections of milk are fatal, with polyuria as the chief symptom.
3. The employment of impure, or stale milk is most dangerous, on the probability that septicæmia will follow the operation.
4. The operation is to be recommended in the later stages of cholera, enteric fever, phthisis, and pernicious anæmia, as a substitute for the transfusion of blood; and, in short, in all cases where transfusion of blood is indicated on nutritive grounds, but where a blood-donor cannot be procured, or where this operation is, for other reasons, impracticable.

CONSTANT AND INCONSTANT TINCTURES.

By J. WILKIE BURMAN, M.D., Ramsbury, Hungerford, Berks.

IN the account (BRITISH MEDICAL JOURNAL, p. 284) of a meeting of the West London Medico-Chirurgical Society, Dr. Thudichum is reported as stating, with regard to the treatment of urethral stricture, that "he did not agree with giving aconite to prevent rigors. Preparations made by the same makers were sometimes seven hundred times as strong as others professing to be of the same strength." Presuming that Dr. Thudichum is correctly reported on this occasion, such an astounding statement of fact, by such an eminent authority, demands, in my humble opinion, more than a passing glance; so much the more so as, in the sixth edition of Ringer's *Therapeutics*, the portion devoted to "Aconite and its Preparation" commences with the statement that "Perhaps no drug is more valuable than aconite." Under these circumstances, one would naturally like to know whether or not the preparations of aconite, referred to by Dr. Thudichum, were obtained from manufacturers of good reputation, as also his experience of others of the more poisonous tinctures in use at the present time. As no one else has since made any remarks on this statement by Dr. Thudichum, with regard to the alarming variability in preparations of aconite, I now venture to draw attention to the subject, because I have had somewhat similar experience with regard to several other inconstant preparations of powerful drugs, which has led me to be very careful, and even sceptical, in the use of preparations of a strength so uncertain with regard to the active principle of the drug therein contained.

In 1872, when acting as deputy medical superintendent of the West Riding Lunatic Asylum, under Dr. Crichton Browne, we had, for two years previously, been largely and successfully using the succus conii in the treatment of cases of acute mania, finding, in accordance with the views of Dr. John Harley (*The Old Vegetable Neurotics*, London, 1869), and of Dr. Neligan, that, excepting the succus, the preparations of conium, in the *British Pharmacopœia*, were quite inert, even in large and extraordinary doses. We used to commence with doses of two fluid-drachms three times daily, gradually increasing the dose according to circumstances. Now, the dose of this preparation of conium, as stated in the *British Pharmacopœia*, is from half to one fluid-drachm; yet, of the best succus conii we then procured, it took no less than a fluid-ounce to have decided physiological effect on myself and some of my colleagues, and I have taken as much as a fluid-ounce and a half of another succus with only slight effect. Under these circumstances, though always commencing with doses of two fluid-drachms, we had gradually to increase them to doses of an ounce and a half and two ounces, three times a day, to get any therapeutic action; and, finding the latter dose ineffectual in some cases, and the variability in the strength of the preparation so considerable, I was induced to seek in conia itself—the alkaloid and active principle of the drug—a more stable and reliable preparation. For the results as to this, I can only here refer to my article "On Conia, and its Use in Subcutaneous Injection," in the *West Riding Lunatic Asylum Medical Reports*, vol. ii, 1872; but I may add that, before we obtained a reliable and stable specimen of conia, after having ten separate lots from six different sources of good reputation (amounting altogether to about four and a half fluid-ounces of the alkaloid), I found that, whilst two minims of one lot had little or no effect on myself when subcutaneously injected (as rendered bland and diluted, in accordance with the formula given in the article referred to), yet half a minim of another lot, similarly injected, caused very serious and alarming symptoms in the case of myself and one of my colleagues—symptoms not truly cicutic, but indicating the presence of other principles difficult to account for. On writing to Messrs. Duncan and Flockhart, of Edinburgh, asking for an explanation of the inefficacy of a second supply from them as compared with the first, they informed me that "both specimens were manufactured by Messrs. Morson and Son, of London, and that the probable cause of the difference between the two lots was the preparing of the second specimen from the cultivated plant, as cultivation completely destroys the medicinal properties of conium." On making further inquiries of Messrs. Morson and Son, they told me that it was possible that Messrs. Duncan and Flockhart had received from them, on one occasion, a specimen of conia not of their own manufacture, when they were themselves out of stock. The three last lots of conia which I received and used, in cases of acute mania, and which I found to be stable and reliable, were had from Messrs. T. and H. Smith, of Edinburgh; and these, they informed

me, were procured from a "reliable source," and prepared from the seeds of the plant.

I have had similar experience of variability of medicinal preparations with regard to the tinctures of hyoscyamus and of cannabis Indica; of the former of which I have, on several occasions, taken myself, in health, two fluid-drachms, without the slightest effect, and have given four fluid-drachms, three times a day and upwards, in asylum-practice, with no beneficial result, though Dr. Lawson used hyoscyamine later on, at the West Riding Asylum, with good effect.

The moral of all this appears to me to be, that we should be very careful in the internal administration of preparations of the more poisonous drugs, of which we have no distinct guarantee as to the amount of the active principle therein contained, and rely more upon the use of stable active principles; whether in the shape of alkaloids or of salts thereof. This variability in the strength of tinctures of drugs, has evidently been noticed by Messrs. Squire and Co., who now introduce to our notice their "constant" tinctures, of which it is stated, in the *BRITISH MEDICAL JOURNAL*, for February 14th, that "they are preparations likely to prove of great interest to prescribers, and to introduce a *much needed* (the italics are mine) element of *certainly*." With regard to aconite more particularly, would such a proved constant tincture (for internal use) be desirable; because its alkaloid or active principle—aconitia—is both poisonous and costly? Until some such "element of certainty" is introduced, in preparations of valuable though poisonous drugs, we must either play or work in the dark with small doses, or run such risks in the administration of larger doses, as no wise or discreet man would like to do under the circumstances, by using larger doses of preparations of uncertain strength.

With regard to the use of tincture of belladonna in nocturnal incontinence of urine (the dose of which is stated, in the *British Pharmacopœia*, to be from five to twenty minims), I may add, in conclusion, that, during the last six months, I have had under my care two cases of that kind, two little girls, aged 12 and 8 years respectively. In both of these I commenced the treatment (as recommended by Sir Henry Thompson) by prescribing five-minim doses of tincture of belladonna, afternoon and evening, and gradually increasing the dose until I reached doses of sixty minims twice daily in each case, at which I stopped. I will only add that both cases (in which all sources of irritation by worms, etc., have been eliminated by treatment) are still more or less incontinent, though I have found the administration of cod-liver oil, especially when combined with the hypophosphite of lime, to have been of some benefit to them.

Sir Henry Thompson says (Quain's *Dictionary of Medicine*, page 984), with regard to the treatment of such cases by belladonna, that "it must be confessed that a troublesome minority is met with, in which the belladonna has had little or no useful influence. It generally exerts some, however, and it is worth while to be careful that the drug has been well prepared. Thus, the writer has been successful with the belladonna of one chemist, after failure with that of another." Now, the question is, what I ought to do with regard to these cases; and, so far as I can judge at present, I must procure a supply of a constant tincture of belladonna (or try atropia), and gradually increase the dose, instead of suddenly jumping from doses of ten minims of an uncertain preparation to doses of a fluid-drachm, as resorted to by Dr. E. Paget Thurstan, in a case described by him in the *BRITISH MEDICAL JOURNAL* for February 7th, in which, after giving doses of ten minims of tincture of belladonna, twice daily for six days, with no good results, he ordered doses of one fluid-drachm twice daily, which caused a complete and permanent cure, four months elapsing without any recurrence of the trouble.

TEACHING OF THE DEAF AND DUMB.—The annual meeting of the Society for Training Teachers of the Deaf and Dumb and diffusion of German or pure oral system in the United Kingdom, and public examination of the pupils, took place on Saturday, May 30, under the presidency of Major-General F. C. Cotton, who stated that the report of the Committee was a very satisfactory one. What they required were new premises. By the bazaar held last year and by donations they had raised about £2,300. They wanted £20,000, but if they had £1,000 more than the sum now in hand they would have no hesitation about beginning the new building, and the committee hoped that the necessary amount would soon be raised. The examination of the pupils was then proceeded with. All the questions were put in spoken words, the children reading them from the movement of the lips; the general opinion being that the results shown quite justified Mr. Kinsey in the statement that, once the teachers had established communication with the children by word of mouth they could teach them anything.

VALVULAR DISEASE OF THE HEART, ACCOMPANIED BY RHEUMATIC SUBCUTANEOUS NODULES.

By JAMES FERGUSON, M.B., C.M., Perth.

THE cases recently reported under the above heading by Dr. Edge and Mr. F. W. Jordan have had a special interest to me, as I have been able to regard them alongside a case meriting the same description, and which has been under my observation for some weeks. As the subject is still one of inquiry, and the example to which I refer controverts certain expressed views as to the characteristics of adult cases, I may be allowed to give the following particulars.

Six weeks ago, I was called in attendance on a series of sore throats in a family which consists of a lady, six children, and a servant. Beginning with a child, within eight days the tonsillitis successively attacked every member of the household save two of the children. The sanitary condition of the house was reported to be good; but this outbreak, and a story of headaches and sickness prevailing for a short time back, directed attention to the drains, when one of these, connected with the house, was found obstructed, with a considerable accumulation of filth in it. The throat-affection in the children and maid was comparatively superficial, and there was only slight constitutional disturbance. In the case, however, of the mother, aged 47, the illness set in with a rigor; deep seated suppuration supervened rapidly, and there was severe prostration. On the third day, an incision into one tonsil gave exit to some pus. Local improvement followed, but considerable fever remained; and, on the seventh day, pains in the elbows, wrists, and knees, and over both tibiae, were complained of. The joints were somewhat swollen; while over the olecranon, about the edges of both patellæ, and studded along the front of the tibiae, were a number of independent nodules, varying in size from a large pea downwards. These were movable under the skin to a slight degree; while, in the case of most, the overlying skin was reddened and tender. Only a very few wanted this inflamed covering; these were the most easily defined and most movable, as well as the largest; but they were also slightly tender on pressure. These characteristics were best presented by a body placed a little above the wrist-joint, lying on one of the tendons of the thumb. An examination of the heart at this time revealed a systolic murmur, heard distinctly, though not loudly, at the apex, very obscurely at the base. During the following three weeks, pains kept flitting about the joints, latterly tending to the fingers and toes; and new crops of the subcutaneous bodies kept appearing at intervals, confining themselves to the upper and lower extremities. These were all of the variety accompanied by pain and redness of skin. Though most numerous in the vicinity of joints and tendons, some appeared also over the fleshy portions of the arm and thigh. I was quite sensible of a rise in temperature about the appearance of each new crop (about five or six in all), though, after the first few days, I do not think more than 102° Fahr. was reached. The last joints involved were the metacarpophalangeal, and there very small nodules appeared. With the disappearance of the bodies, the skin-spots became bluish, and gradually faded. One day, sharp pain in the cardiac region was complained of; but there were no abnormal physical signs accompanying, save the murmur referred to, and that now presented increased intensity. At this date (thirty-fifth day of illness), the murmur is less obtrusive than at the period just referred to, but more so than when first observed; the joint-pains have been gone for some days; a few obscurely perceptible nodules remain, while the site of others is marked by faintly livid spots; and, generally, the patient is steadily improving.

As regards treatment, it appeared to me that salicylate of soda and the ordinary alkalies had comparatively slight effect upon the symptoms of this case, while they produced unusual depression. Ultimately, I substituted quinine with hydrobromic acid, and improvement set in with the change.

I ought to add that the patient has been hitherto healthy, never previously had rheumatism, and has no rheumatic family-history. There is no suspicion of syphilis.

Dr. Edge, in the interesting remarks in the *JOURNAL* of April 11th, which prove him to be familiar with the cases already recorded, distinguishes between two classes of this affection, according to its occurrence in children and in adults respectively; and claims for the adult type certain features not found in the other. But the example just reported appears to present a crossing between the two types that has hitherto been unnoticed; and that, I trust, will be sufficient apology for its being placed on record.