Neither the ordinary medical witness, nor the expert, has any right, moral or other, to allow feelings of partisanship to warp his judgment, or color an opinion given under oath.

The attending physician must, of course, show the utmost loyalty to his patient, but this loyalty does not call for gross exaggeration, or, worse still, downright perjury on his part. His only legitimate function is to administer to his patient, with all the skill of which he is possessed; to observe carefully and minutely the manifestations of the patient's disorder, and, finally, when called upon, to go upon the witness stand and state what he has observed, together with such conclusions only as practical experience with similar cases allows him to draw therefrom.

In cases of accident involving a possible lawsuit, it is no part of his duty to endeavor to fix responsibility; and it should be beneath his dignity needlessly to frequent law offices, to truckle with claim-agents, or in any way to act as a quasi-legal go-between in proceedings looking toward the financial adjustment of his patient's grievances. These same principles apply with equal force to the medical expert. He also should never forget that, both in and out of court, his function is solely a medical one. And if his sense of honor is, as it should be, of the same high order as his intelligence, he will not stoop to petty tactics, born of offensive partisanship, and despised by judge, jury, counsel, and general public alike.

Let us picture, now, the attending physician and the medical expert in a given court-room, waiting their turn to go upon the stand. I have given testimony in several states, and I can assure you that in no others is the dignity of the law so forcibly impressed upon one's mind as in our own Massachusetts. Hence, the first thing the waiting medical witness should be wise enough to do, is to take his tone from that of the court. Upon the stand the witness' manner should never be flippant, nor should it bear the stamp of spurious ease. His answers to counsel should be rigidly responsive, and he should never volunteer a statement when no question is before him. He should have prominently in mind the fact that directly he steps upon the stand he is a servant of the commonwealth. This does not mean, however, that he is in any sense an advocate; quite the contrary. Therefore, he should always refrain from arguments with counsel. He will find it difficult, very difficult, at times to give the desired "yes" or "no" answer, but it is always better to try to do so. Witness will lose nothing by so doing, because both the court and his own counsel will see to it that he has later an opportunity to amplify his statement to his entire satisfaction. His language should represent an effort to meet with the understanding of the twelve men who will ultimately decide the case. He should sedulously avoid the answer: "Not necessarily," which never serves other purpose than to get him deeper into the mire of cross-examination. He should not

keep one eye on his own counsel and the other on his cross-examiner. His whole attention should be directed toward the jury. He should not constantly appeal to the court when crowded by legitimate cross-questioning, and above all things, he should never allow his voice to sink to an inaudible murmur. Neither should he allow a display of temper to betray itself by shrill or petulant tones. The man who learns quickly to keep his temper in his pocket has the making of a good witness.

Gentlemen, I could go on at greater length, but am stayed by the firm conviction that if the above simple suggestions were conscientiously followed by every medical witness in every case, court proceedings would soon lose their terror for men in our profession, the value of their testimony would be enhanced a hundredfold and there would soon be little left in the way of abuse of medical testimony for the legislature or any other governing body to correct. It is, therefore, most emphatically the clear duty of each and every one of you in your court activities to break away from evil tradition and start the much-needed work of regeneration.

Original Articles.

SIMPLIFIED METHODS OF TRANSFUSION.

By EDW. H. RISLEY, M.D., F.A.C.S., BOSTON.

The purpose of this article is not to describe a new technic, but to offer a few suggestions as to how any method used may be made simple and successful.

A great deal of almost mystery has surrounded the operation of transfusion in the past, mainly because of the delicate methods of technic necessary until quite recently. Transfusion should not be—and actually is not—a difficult procedure as we have been led to suppose.

Success depends on two factors: 1. The recognition and appreciation of how easily blood clots when coming in contact with any foreign substance other than vessel walls, and, 2. The possession of proper apparatus for counteracting clotting. Apparatus to be serviceable must be simple and sure to work and not too delicate. A great many clever devices have been invented to facilitate the technic and make the procedure one which can be safely and successfully used in the hands of the surgeon. So far, the procedure has been rarely undertaken by any but those skilled in the use of some particular bit of technic, and is not a procedure which the physician or general practitioner (as contrasted with the surgeon) cares to undertake.

Transfusion is a device of such great service and the conditions in which it is used are generally so much of the emergency type, that a technic cannot be considered a safe and simple

technic that is not available for every physician and without the necessity of the beforehand tedious preparation.

Recently the use of sodium citrate to prevent clotting has been advocated, especially by Weil,¹ and simple technic developed by Lewishon,² and also Zingher.³

The author has recently tried out these and many other advocated methods in the laboratory and makes the following suggestions for those wishing to do transfusion, and who wish to have on hand simple means of assuring its success.

It occurred to us to try among other procedures, the collection of blood in a simple glass cylinder, uncoated with paraffin, but kept at body temperature by previous immersion in hot water (110°) and during transfusion wrapped in a hot towel wet in sterile water. This cylinder is a modification of the Kimpton-Brown⁴ tube which we find easier to handle and less breakable (see drawing), or practically the Vincent tube.

1. Cannula end with ground glass tip.
2. For bulb and tube (situated on side instead of as here drawn).
3. For cork stopper.

With two assistants and with good sized and accessible veins of both donor and recipient, blood could be transferred from one to the other without clotting in the warm tube, during the time of transfusion. This was always possible with two assistants and no delay in the process, but with only one or no assistant and with the necessary delay in effecting the proper opening of the recipient's vein, clotting was very liable to take place in the cannula end of the tube. We feel, however, that in the event of the breakage of one (of the two tubes generally on hand) or lack of time in which to recoat a second tube, the original tube may be rapidly washed out, first with cold then with hot sterile water and transfusion carried on with a reasonable expectation of success. This is offered simply as a suggestion which at some time might be successful.

Methods of transfusion have recently been revolutionized and greatly simplified by the introduction of the use of sodium citrate to prevent clotting.

Using one part of a 2% citrate solution to ten parts of blood, transfusion is made extremely simple, safe and sure by any of the various technics one wishes to employ. This of course applies only to indirect transfusion, which is the only method advocated at present.

The author is almost equally divided between the use of the uncoated glass cylinder and the

method by syringes. Both have their advantages. The apparatus necessary with the cylinder method, while more fragile, is much less expensive to provide oneself with. Good 20 to 50 c.c. syringes are very costly.

With easily accessible veins in the recipient, as in adults, the placing of 15 c.c. of citrate solution in the cylinder (not coated with paraffin) drawing 300 c.c. of blood, adding another 15 c.c. of citrate solution and thoroughly mixing the two, then introducing this into the recipient's vein (the recipient, for psychic reasons, being in an adjoining room), is most simple and safe.

Citrated blood can be kept several hours if necessary before being transferred to the recipient and it has also been demonstrated that the coagulation time of the recipient's blood after citrate transfusion was increased rather than decreased, as one would expect. This point we have not confirmed by laboratory test, but we have found no ill results from the use of citrated blood.

With infants, when the psychic element in the recipient need not be considered and smaller amounts are to be used, and perhaps in divided doses, the withdrawal of 20 to 50 c.c. of blood by aspiration from a vein in the bend of the elbow, (without the necessity of cutting down on the vein) into a syringe containing 2 to 5 c.c. of citrate solution, then adding the same amount at the end of aspiration, agitating the syringe so as to mix the two, then injecting into a small exposed (saphenous or external jugular) vein is also extremely simple and sure to work.

Most medical (as distinguished from surgical) men at present are familiar enough with the use of the needle in phlebo-puncture to be able to accomplish this readily.

Syringe transfusion can readily be done alone if small amounts are to be used, and with the aid of a nurse and one assistant to keep the needles in the veins of the donor and recipient free during the transfer of the syringe from one to another, by the injection of small amounts of weak (1%) citrate solution, any amount desired can be transfused with ease. The 16 gauge (B. & S.) needle used in salvarsan work will suffice, but the larger 11 gauge is much better.

It is also possible to do transfusion by the even simpler method of Lewishon,² who draws blood from the donor by means of an 11 gauge cannula plunged into the donor's vein, collecting it in an open beaker, in which the citrate solution is contained, and stirring the blood as it accumulates with a glass rod to ensure thorough mixing with the citrate. The citrated blood is then carried to the recipient and poured into an open funnel leading by a rubber tube and trochar to the recipient's vein, or introduced by means of a salvarsan apparatus. This is a simple method, but has the great objection that the blood necessarily comes into contact with the air a great deal.

The purpose of this paper is to point out the

¹ Journal A. M. A., Vol. lxiv, p. 425, 1915.

² Med. Rec., Jan. 23, 1915; Surg. Gyn. and Obst., July, 1915.

³ Med. Rev., Vol. lxxvii, p. 440, 1915.

⁴ BOSTON MEDICAL AND SURGICAL JOURNAL, Vol. clxiv, p. 788, 1913.

value of citrate solutions in transfusion and to show that almost any method can be made to succeed if this is used.

An adequate review of the history of the use of citrate solution is to be found in the articles referred to in the first part of this paper and is not considered necessary here.

We think we are justified, from our recent laboratory investigation of these methods, in recommending that every physician who contemplates doing transfusion at all, provide himself with the following apparatus:—

1. Two large (100 and 300 c.c.) glass cylinders. (See cut.) (Easily obtainable at any glass blowers for the small outlay of about two dollars.)
2. Five hundred c.c., in two bottles, of sterile, 2% sodium citrate solution. (This can be re-sterilized by boiling repeatedly without deterioration.)
3. A glass graduate (25 c.c.)
4. A set of glass syringes. (Two 5 c.c. and one or two 20 c.c.)
5. Two 16 gauge cannula-trochars.

With this layout we feel sure he will be able to do successfully any transfusion that he is called upon to do.

Since the completion of this paper, Simons of Nashville, Tenn., has published the record of three cases (*Jour. A. M. A.*, Oct., 16, 1915), receiving citrate transfusion, who suffered severe shock; and two ended fatally. These are the first instances reported by any one in which any ill effect has been noted with the citrate method. An analysis of Simon's first two cases shows symptoms entirely explainable on the ground of hemolysis which may happen in any transfusion. The reasons for the ill effects in the third case are not so clear.

We do not believe that these three cases should absolutely condemn the citrate method. If other men have had similar results they should be published immediately.

The method is so simple and has been attended by success in so many cases that we believe, when properly safe-guarded as an ordinary transfusion is, there should be no danger from its use.

INSANITY BY CONTAGION.*

By B. HENRY MASON, M.D., WORCESTER, MASS.

HISTORY affords us knowledge of psychic epidemics, occurring subsequent to and during the middle ages, that were of a hysterical nature. With the advance of civilization and intelligence, such epidemics in the enlightened part of the world no longer occur, in their former allegorical fulness, with the exception perhaps of certain provinces in Russia, and there because of

* Read at the meeting of the New England Society of Psychiatry at the Massachusetts School for the Feeble-Minded, Waverley, Mass., Sept. 28, 1915.

an arrest of social development which has left certain remote populations in a state of mental childhood.

There appears to have been a strong religious element in most of the attacks, and the victims were said to be possessed by the devil and were called demonomaniacs.

Such an epidemic is said to have begun toward the end of 1609 in a convent of the Ursulines at Aix by the confession of Madeline de Mandol, a nun, who believed that she was possessed with demons who were operating under the command of a priest, Louis Gaufridi, a man of great honesty and strict morality. He was not able to convince the people that he was innocent, later became insane himself, and was finally burned at the stake. Many convents were the scenes of similar epidemics. The one at the convent of Sainte Brigitte appears to have lasted about ten years.

In 1860, an hysterical epidemic occurred at Versegne in Friuli; and in 1879, the paranoiac epidemic of Arcidosso was brought about by David Lazzaretti, an hallucinated person who believed that he was inspired by God. Though some time dead, it is claimed the prophet still has his followers.

Similar epidemics have been started by religious fanatics in this country. "In 1902," says Jacoby, "the population of a large country town, in Russia, was suddenly seized by a religious fanaticism and rushed into the church, destroying everything and crying, 'The Truth is coming!' They placed on the altar one of their own number, a man of no worth, whom some passer-by had invested with divine power.

Another form of psychic derangement is that of Lycanthropy, in which the victim believes he has been changed into a wolf through the agency of the devil; or the imagined transformation may be into other animals. This manifestation of mental aberration was of frequent occurrence during the 16th and 17th centuries, and isolated instances are now occasionally met with, though with certain modifications.

Tarantism or dancing mania is a form of mental alienation which has prevailed at different times both in Europe and in this country. The craze that has swept the country the past three years as a result of the modern dances is a contagion that might properly be put into the hysterical group.

Contagion when met with at the present time, usually displays itself in a more concrete form than it did a few centuries ago. The nature and degree of the contagion vary greatly. Tanzi states, "There is an hysterical contagion and a paranoid contagion which form the two opposite poles between which oscillate all the psychical epidemics and all the varieties of communicated insanity."

A careful analysis of cases of insanity by contagion reveals two facts that are fundamental in all such instances. First, there is always a predisposition on the part of the person who is the