

MEDICAL



COLLECTORS



ASSOCIATION

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## Newsletter #39

July 17, 2001

Once again I would like to remind everyone of the need to register for the meeting in Mobile, Alabama. Enclosed with this Newsletter is an announcement of the meeting, registration form and an agenda. Sam Eichold has done a wonderful job of helping us put together a very interesting program, which should be of interest to all of the members of the group.

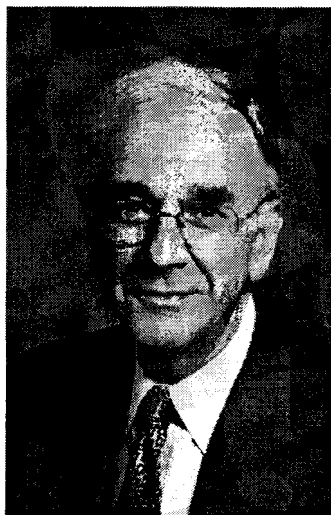
I hope that we will see a good attendance. We need to have a volunteer for the next meeting. Is there anyone among the membership who would like to host the meeting. All of our meetings have either been on the East Coast or in Europe. Perhaps someone who is a member from the Midwest, Southwest or West, would like to have us out. The responsibilities of leading a meeting basically consist of choosing the site, making some recommendations about hotels, providing a place to have the session and also helping to line up the speakers. Is there anyone among you who would like to do this?

Membership in the group is falling off. If any of you know of other collectors or dealers who might be interested in participating, please let them know of the existence of the MCA. Do you think it would be useful for us to have a Web Site? Please let me know if any of you think that would be worth doing and if so what you would like to see on the Web Site.

This issue contains another of Bill Helfand's Historical Images of the Drug Market. Bob Kravetz has kindly given us permission to reproduce his contributions to the American Journal of Gastroenterology and has sent us a number of pages for inclusion. You will find one later in the issue. Larry Adams has sent us some interesting medical broadsides by the Drs. Shallenberger.

They nicely compliment the selection from Bob Kravetz of a hemorrhoid clamp. This issue also contains some additional information about the Mobile Medical Museum, which is appended, and a request from the Museum for a working iron lung. Anyone who has knowledge of the whereabouts of such a device should contact Patsy Starkey. Finally, there is a very interesting article on leechcraft by K. Codell Carter, which appeared in the Journal of The Royal Society of Medicine. Bleeding is a subject which appears to be of interest to all medical antique collectors and so I thought it would be a nice addition to this Newsletter. Although The Royal Society of Medicine normally charges for reproduction of their articles, they have generously waived this fee for us since we are a small non-profit group.

An interesting aside here may be relevant. A Dr. Clutterbuck presented a series of lectures around 1839 on bloodletting. In the course of these lectures he made some comments about the newly invented stethoscope. I found it particularly paradoxical that this strong advocate of a treatment for which there was no scientific foundation in most cases, strongly condemned the use of the stethoscope as something verging on quackery. So it is your choice: Leechcraft or Stethoscopes, which is the symbol of the practice of medicine.



While mentioning stethoscopes it may be of interest to some of you that my book on the Evolution of the Stethoscope is in the final stage of printing and should be available sometime in the early Fall. This has been a lot of fun to do and I had help from several of the members of the association. I would like to thank them for their suggestions. I will send out announcements when the book is available and like my previous book on the blood pressure, I will ask the publisher to provide a discount for members of the Medical Collectors Association.

In the course of preparing the book which I mentioned above, I had to seek out a large number of stethoscope patents. Patents are of particular interest because they show the true intent of the inventor and also provide a firm date on when the instrument was conceived. Almost everyone has at least one or more monaural stethoscopes and they are usually dated towards the mid or late nineteenth century. However, monaural stethoscopes continue to be produced well into the twentieth century and also to be used. The two patents I have included are each dated 1906.

The Scientific Instrument Fair in London has been taken over by a commercial group and I have enclosed with this Newsletter an e-mail from the group indicating the dates of the forthcoming meetings and contact addresses. Any of you who have not had the opportunity to attend the Scientific Instrument Fair in London should do so if he or she can. They are always extremely well attended and there is ample opportunity to pick up unusual and interesting devices. I have had great luck there at finding things which greatly enhance my collection.

Finally, once again I would like to make a plea for some active participation among the membership in producing the Newsletter. Many of you must have items which you cannot identify or other interesting things that you would like to share with the group. Please do not hesitate to send me anything that you think might be of interest for inclusion in the Newsletter so that we can all enjoy it and share it.

I hope to see many of you at the meeting in Mobile.

Best wishes for a happy Summer.  
Sincerely,

M. Donald Blaufox, M.D., Ph.D.

# UNITED STATES PATENT OFFICE.

OTTO STÄDTLER, OF GEHRDEN, GERMANY.

## STETHOSCOPE.

No. 814,923.

Specification of Letters Patent.

Patented March 13, 1906.

Application filed July 24, 1905. Serial No. 271,106.

*To all whom it may concern:*

Be it known that I, OTTO STÄDTLER, a subject of the German Emperor, residing at Gehrden, in the Province of Hanover and Kingdom of Prussia, Germany, have invented a new and useful Improvement in Stethoscopes, of which the following is a specification.

My invention relates to improvements in stethoscopes with folding disk; and the objects of my improvements are, first, to enable the instrument to be brought into small compass and convenient form, so as to be carried in the pocket or placed in a flat case; second, to protect its hollow stem from the entrance of foreign bodies when the disk is in a folded condition; and, third, to prevent accidental loss of the disk, which might occur when the latter was removed from the tube in order to reduce the space required in carrying it. I attain these objects in the manner indicated in the accompanying drawings, in which—

Figure 1 shows a side view of the stethoscope ready for use; Fig. 2, the disk seen from below; Fig. 3, a side view of the stethoscope with disk folded together for transport.

Similar letters refer to similar parts throughout the several views.

The hollow stem *a*, of suitable material, as wood, hard rubber, metal, or ivory, bears at its lower end a disk composed of three parts, of which the two side ones *b* and *c* are hinged to the third or central one, which latter is fixed on the end of the hollow stem and may be in one piece therewith. The portions *b* and *c* are attached by sunken hinges *d* in such manner that they cannot be folded back toward the stem *a*, but can, however, be folded together below this latter. As when the instrument is being used it must press closely to the body of the subject being examined in order to exclude other sounds than those which it is desired to hear, the disk is pro-

vided on its under surface with a packing-ring of soft rubber or similar material *e*, which has the further effect of preventing slipping when in use. When the disk is folded together, the rubber packing-ring *e* forms a closed joint to protect the bore *f* from the entrance of foreign substances. This is of great advantage, as should a piece of wadding or other small object get into the bore, it would influence the result of the examination.

What I claim as my invention, and desire to secure to me by Letters Patent of the United States of America, is—

1. In a stethoscope the combination of a stem and disk comprising a plurality of hinged parts one of which is integral with the stem.

2. In a stethoscope the combination of a stem and a tripartite disk comprising a central portion integral with the stem and two side portions hinged to said central portion.

3. In a stethoscope the combination of a stem and a tripartite disk comprising a central portion integral with the stem and two side portions and hinges connecting the side and central portions and permitting limited folding movement to the side portions.

4. In a stethoscope the combination of a stem and a tripartite disk comprising a central portion integral with the stem and two side portions and hinges connecting the side and central portions and permitting limited folding movement to the side portions together with a flexible packing-ring attached to the face of said disk substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

OTTO STÄDTLER

Witnesses:

GEORG KING,

CARL SCHWIEGER.

O. STÄDTLER.  
STETHOSCOPE.

APPLICATION FILED JULY 24, 1905.

Fig 1

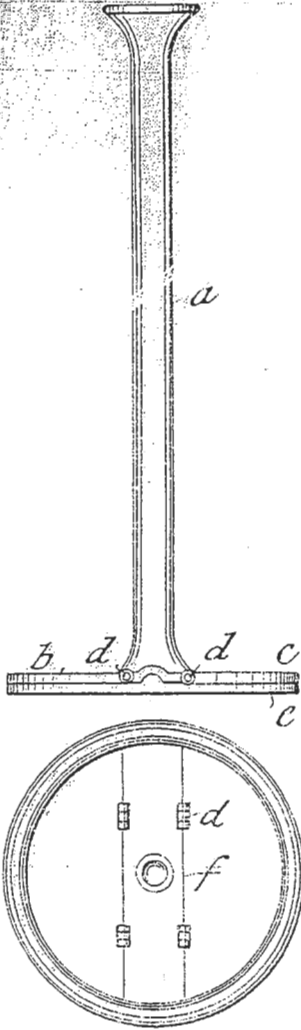


Fig 3



Fig 2

Witnesses  
*A. Müller*  
*H. Pausch*

Inventor  
 Otto Städtler  
 by his Attorney *R. W. ...*

# UNITED STATES PATENT OFFICE.

THEODOR WALDEMAR TALLOQVIST, OF HELSINGFORS, RUSSIA.

## STETHOSCOPE.

No. 824,450.

Specification of Letters Patent.

Patented June 26, 1906.

Application filed October 7, 1905. Serial No. 281,818.

*To all whom it may concern:*

Be it known that I, THEODOR WALDEMAR TALLOQVIST, doctor of medicine, a subject of the Emperor of Russia, residing in Helsingfors, in the Grand Duchy of Finland, Russia, have invented certain new and useful Improvements in Stethoscopes, of which the following is a specification.

The present invention comprises improvements in stethoscopes whereby the instrument can quickly be changed from the form it has in the pocket to the form it has when ready for use, the instrument being so constructed as to form a single piece without any loose parts, and, further, that the tube of the stethoscope may at the same time serve as a holder for a chemical thermometer. The usual instruments for examination which a doctor always carries with him are thus comprised in a single apparatus.

The invention is shown in the annexed drawings, wherein—

Figure 1 shows the stethoscope with folded disk in the shape it has when carried in the pocket. Fig. 2 shows a vertical section of the stethoscope. The thermometer is here shown in dotted lines. Fig. 3 shows the stethoscope ready for use. Fig. 4 is a horizontal projection of Fig. 3.

The disk, which as in other stethoscopes can be made of metal, wood, or other suitable material, is made either flat or concave on the side which lies against the ear of the doctor. The concave shape is the usual one and is shown in the drawings, Fig. 2.

As is seen from the annexed drawings, the disk is made in three parts, a center *a* and two side pieces *b*, which are hinged to the center piece. There are four hinges, of which two, *c*, are long and two, *d*, short to make it possible to turn the tube through ninety degrees. The center piece *a*, which like the side pieces *b* is flat on the side nearest the tube *f*, has a tubular flanged center *e*, which fits into a corresponding hollow in the tube *f*. The center piece *a* is fastened to the flanged tubular piece *e* by the flanges of the tube *g*, which is fixed and prevented from turning by the pin *h*. The center piece *a* and the side pieces *b*, fastened thereto by the hinges *c* and *d*, can, when the latter are opened out to lie in the same plane as the center piece *a*, be turned round on the end of the tube *f*, but not more than ninety degrees, because the ends of the hinges *c* abut against the sides of the wider part *p* of the tube, Figs.

2 and 4. Through the stiffness of the hinges the side pieces *b* are held in the position shown in Fig. 1 when folded up.

When the stethoscope is to be used, the side pieces *b* are folded out, as shown in Fig. 4, whereafter the tube *f* is turned round through an angle of ninety degrees. The lower enlargement *p* of the tube *f*, which lies against the disk, is flat and will lie across the center piece *a* and the side pieces *b*, which cannot then be folded up. The stethoscope is now ready for use. The enlargement *p* of the tube *f* is provided with two grooves *k*, in which the hinges lie when the side pieces *b* are folded up, and these hinges *c* prevent the turning of the tube *f* more than ninety degrees. The shorter hinges *d*, however, do not prevent the tube *f* from being turned round, Fig. 4. The tube *f* is provided with a pin *l* when it is used as a holder for a fever-thermometer, the point of the thermometer resting against this pin. To hold the thermometer, there are two springs *m* and *n* in the upper part of the tube *f*, these springs being connected by the rivet *p'* and partly closing the tube *f*. A single spring can, however, be used instead of the springs *m* and *n*. On pressing the pin *l* and turning the stethoscope so that the disk end is uppermost the thermometer will slide out. The inner diameter of the tube *f* is made of such a size that the sound-waves have ample room to go through, and the stethoscope can therefore be used even if the thermometer is in it. The thermometer is so fixed by the springs that it does not rattle or cause disturbing noises when the stethoscope is in use.

I declare that what I claim is—

1. In a stethoscope a tube, a center piece secured to said tube two hinged pieces secured to said center piece and adapted to fold back over said tube, said center piece and hinged pieces forming the usual disk of the stethoscope means for locking said hinged pieces in their outward position.

2. In a stethoscope a tube, a center piece rotatably mounted on one end of said tube, two hinged pieces secured to said center piece and adapted to fold back over said tube, said center piece and hinged pieces forming the usual disk of the stethoscope, side projections on said tube abutting against said disk, means for permitting a partial rotation of said side projections relative to said disk.

3. In a stethoscope a tube means for removably holding a thermometer within said

tube, said means comprising a pin located across said tube and a hand-released spring device situated at one end of said tube, a folding disk secured to said tube and means for locking said folding disk in its open position.

4. In a stethoscope, a tube the usual disk at one end of said tube, a center part and two hinged pieces comprising said disk means for permitting rotation of said disk relative to said tube, and means in one position of said disk for holding said hinge-pieces flush with said center piece.

5. In a stethoscope a tube, the usual disk at one end of said tube, hinged pieces comprised in said disk, means for turning said hinged pieces back upon said tube, means for rotating said disk relative to said tube, projections on said tube, one hinge on each of

said hinged pieces out of the path of said projections and one hinge on each of said hinged pieces in the path of said projections for the purpose described.

6. In a stethoscope a tube, a second small tube inserted and held in said first tube, an annular flange on said second tube, a disk comprising a center and two side hinged pieces said center piece taking over and rotatable on said flange, projections on said tube, stops on said disk substantially as and for the purpose described.

In witness whereof I have hereunto signed my name, this 9th day of September, 1905, in the presence of two subscribing witnesses.

THEODOR WALDEMAR TALLOVIST.

Witnesses:

VICTOR EK,

OSCAR SANDSTRÖM.

T. W. TALLQVIST.  
STETHOSCOPE.

APPLICATION FILED OCT. 7, 1905.

FIG. 4.

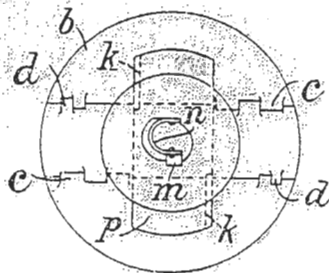
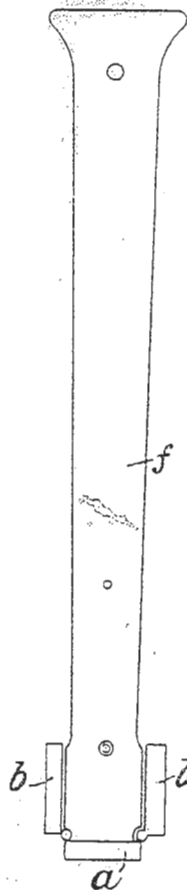


FIG. 1.



Wireses.

FIG. 2.

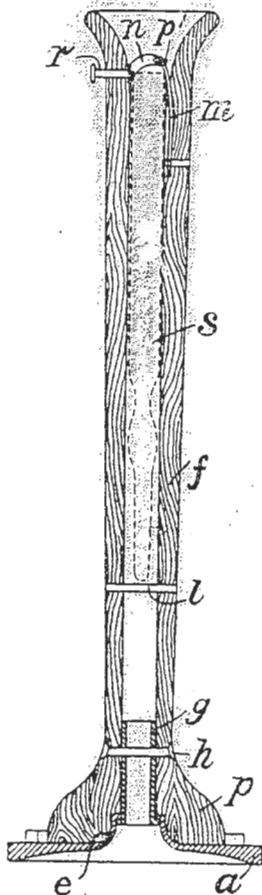
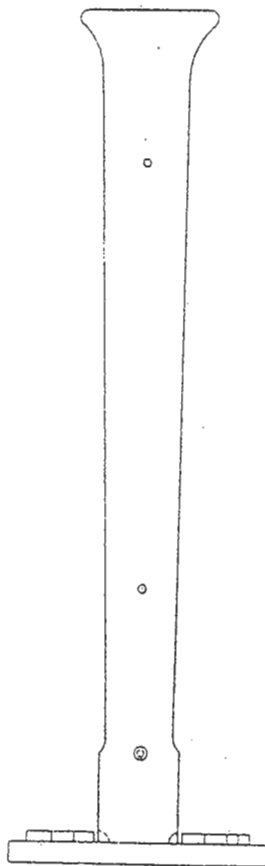


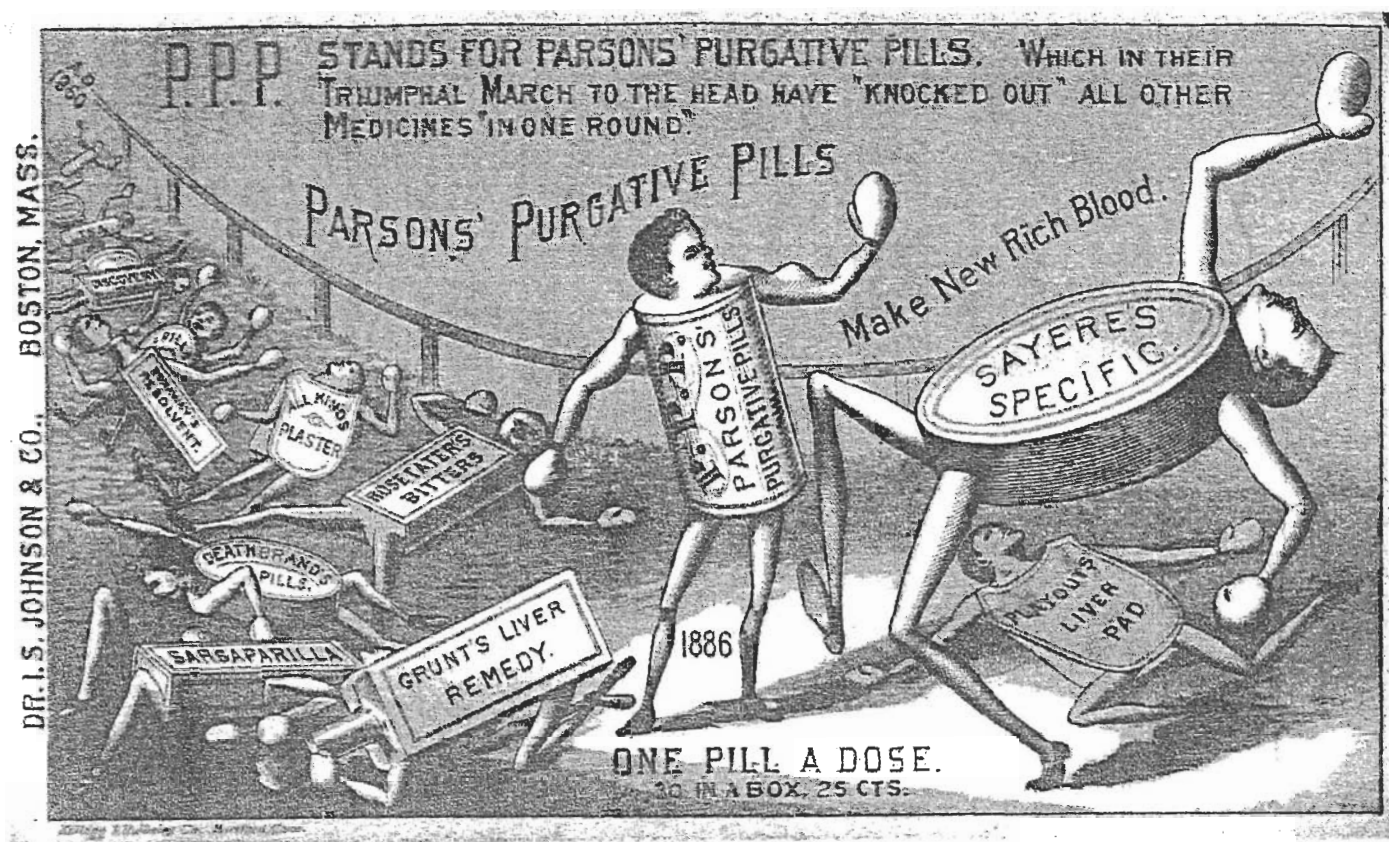
FIG. 3.



Iqvegtör.

W. G. Kelly  
M. L. Suttle

Theodor Waldemar Tallqvist  
By his attorney  
Edward P. Thompson



## Historical Images of the Drug Market XXXX

*by William H. Helfand*

VISUAL metaphors, using images to convey intangible concepts, are the mainstay of the editorial cartoonist. They have often been used in advertisements for proprietary medicines as well. Common images have included knights slaying dragons, horses racing, and demons attacking the victims of disease. In this 1886 trade card for Parsons' Purgative Pills (8.7 x 14.9 cm.), the anonymous artist has used boxes with bodies made of bottles and boxes of medicine, with all of them vanquished by the ultimate victor, Parson's Purgative Pills. The labels

on the defeated rivals are clues to the products themselves, and include All Kinds (Allcock's) Plaster, Grut's (Hunt's) Liver Remedy, Rose-tater's (Hostetter's) Bitters, and Deathbrand's (Brandeth's) Pills, each a product with similar indications to Parsons' Purgative Pills. As the headline on the trade card notes, the victorious Parson's Pills have "knocked out" all other medicines. Their tenure, however, was only short-lived, for the product does not appear in the catalogs of pharmaceutical wholesalers after the turn of the century.



## Leechcraft in nineteenth century British medicine

K Codell Carter PhD

*J R Soc Med* 2001;94:38–42

In the early nineteenth century, British physicians accepted the use of leeches as an ancient and honourable part of their professional heritage<sup>1</sup>. Moreover, the beneficial consequences of leeching were immediately obvious to physicians and patients alike. At that time, diseases were generally conceived as collections of morbid symptoms. For example, local inflammation was typically defined as a combination of swelling, heat, redness, and pain<sup>2</sup>. These features were taken to indicate an excessive quantity of blood in the affected area and could thus be relieved, if only temporarily, by abstraction of blood from the inflamed site. Leeches were deemed especially useful in areas too constricted to allow other methods of local bloodletting—for example, around and within the nose and ears, inside the mouth and in the rectum and vagina. They were also used as a method of general bloodletting—for example, in a patient too weak or otherwise unable to withstand venesection. The usual principle, however, was to place them as near as possible to the focus of the morbid process: for headache, on the temples; for gastrointestinal inflammation, on the epigastrium; for bladder troubles, on the shaved pubis; and for menstrual disorders, on the thighs, the groin and the vulva<sup>3,4</sup>.

### TECHNIQUES

When brought into contact with a living animal, a leech punctures its victim's skin with a bite that 'resembles the emblem on a Mercedes-Benz<sup>5</sup>'. It then secretes various anaesthetic, anticoagulant and diffusing agents, and for about half an hour sucks the blood that flows from its host. Tests conducted in the early nineteenth century indicated that a leech would consume about half an ounce of blood (15 mL) before detaching itself<sup>6</sup>. However, leeches are sometimes reluctant to perform their duties, and the medical use of leeches required mastery of certain techniques. In 1804, Wilkinson recommended that the area to which leeches were to be applied should be washed with soap and water, rinsed thoroughly, and, when appropriate, shaved very close to the skin: 'I have found the sharp points of the incised hairs so greatly to annoy them, as to prevent their fixing<sup>7</sup>'. He observed that leeches could best be controlled if placed in a wine glass; this was

useful not only 'for observing their motions, circumscribing their limits, retraining them in their proper place assigned for their bite, but it also tends to support them when filling, and thereby prevents their separating from the parts sooner than they otherwise would do.' Wilkinson recommended using smaller glasses when applying leeches to the temples, pubes, groin, scrotum, knee or elbow joints, or eyelids, or to the limbs of children. If leeches were reluctant to bite, they could be encouraged by rubbing the target area with sugar-water, milk, or, most effective of all, a small quantity of fresh blood. Later in the century, practitioners found that submerging leeches in diluted wine or, very briefly, in warm full-strength porter, would cause them to bite and suck vigorously<sup>8</sup>. If a leech became attached at the wrong site (or 'what is equally bad' the practitioner's fingers) it can be made to release its hold by sprinkling table salt on its mouth<sup>9</sup>. Wilkinson warned that the practitioner should 'be careful not to pull at the animal lest he destroy it, and perhaps ineffectually put the patient or himself to unnecessary pain.'

### Anus

Through the nineteenth century, there was considerable interest in improving techniques for applying leeches to less accessible areas of the body. In 1818 William Brown observed that morbid accumulations of blood commonly developed in the head and the lower belly. 'These congestions are often repeatedly relieved by the efforts of nature; in the one case by bleeding from the nose, and in the other by bleeding from the extremity of the rectum<sup>5</sup>.' However, Brown criticized British physicians for being slow to develop alternative methods for use when these 'efforts of nature' were inadequate. Brown recommended the following procedure for taking blood from the haemorrhoidal veins—a procedure he described as well-established in many parts of Europe. The patient

'is seated on a perforated chair, which only uncovers the anus itself; the operator, stooping or kneeling, by means of a taper, sees the part to which the leech is to be applied; and, provided with a small round wide-bottomed bottle with a long neck, just large enough to contain one leech, he allows the animal to crawl out and fix itself on the part intended. The operator having applied one leech, withdraws the bottle, and proceeds to

fix one after another till the desired number have been applied; a basin is placed under the chair into which the blood flows'<sup>5</sup>.

Brown pointed out that this technique was useful in most abdominal inflammations 'such as hepatitis, enteritis, puerperal fever, [as well as] in suppressed menses, lochia, etc.'

### Mucous membranes

Since disease processes often involve the mucous membranes, it seemed desirable to apply leeches to these as well, but this was often difficult. Through the first decades of the century, physicians announced new techniques for doing so. In 1822 Philip Crampton reported that, 'in every kind and degree of inflammation of the eye' one or two leeches applied directly to the conjunctiva 'had a more decisive effect in unloading the inflamed and turgid vessels of that membrane, than the application of five times that number to the temple and eyelids'<sup>6</sup>. Encouraged by this success, Crampton also applied leeches directly to inflamed tonsils. But this procedure involved obvious risks: leeches could become displaced and accidentally suffocate the patient. To avoid this problem,

'a single thread of silk was passed through the body of the leech, at about its lower third, the ligature being made fast to the finger of the operator, the leech . . . was introduced into the mouth, and its head, directed by a probe, was brought in contact with the inflamed tonsil. The animal fixed itself to the part in an instant, and, in less than five minutes, being gorged with blood, it fell upon the tongue, and was withdrawn'<sup>9</sup>.

A later physician reported that passing threads through leeches, 'far from incapacitating them from action, causes them to bite with increased ardor, and, in fact, may be used to stimulate torpid leeches'. Crampton reported that when leeches were applied in this way, 'relief [to the patient] was immediate'. He also found that the application of leeches to the internal surface of the nostrils provided the greatest possible relief in cases of 'undue determination of blood to the brain' or in cases of habitual nose-bleed.

### Larynx

A decade later, in 1833, Osborne acknowledged the value of Crampton's pioneering work and recommended a few improvements. In bronchitis, he observed, 'the application of leeches to the larynx and to the trachea in the triangular space between the mastoid muscles, has appeared . . . to be the most decisive and immediately successful remedy of all those I have ever employed'. This use of leeches was also

effective in laryngitis and was 'of singular efficacy in stopping the cough of phthisis, in so much, that by resorting to it . . . we have been enabled to secure sleep at night, and during the day to keep the phthisical patients so free from cough that a superficial observer might readily believe that we had cured the disease.'

Osborne also pointed out that leeches would continue to suck when submerged in water 'at a temperature considerably above 100 degrees[F]'. This meant that the patient could be placed in a warm bath; when the leeches finished sucking and dropped off, the warm water ensured that the bites continued to bleed so that more blood was extracted. One physician, 'desirous of being enabled to get about among [his] patients as speedily as possible, applied sixty leeches to his own sprained ankle which he then soaked in hot water. 'The consequence,' he reported, 'was not merely a faintness, like death, from which no measures could for half an hour or more restore me, but an excessive degree of general debility, from which I did not recover entirely for months'<sup>10</sup>.

### Rectum

Osborne felt that his own most valuable contribution to leechcraft was in solving a problem that had long vexed physicians. In treatment of intestinal inflammation, application of leeches to the anus had little effect, and 'to apply them internally is often difficult, on account of the violent contractions of the sphincter.' Osborne overcame this difficulty by use of a grooved metal rod (with an elegant leather handle) that he designed and ordered to be constructed especially for the purpose. In using the rod, Osborne explained, one first passes a thread through the *tail* of the leech (as Crampton had recommended a decade earlier). It is then placed in the groove of the instrument and,

the operator, holding the ends of the threads, introduces the instrument into the rectum, and pushes it up so as to cause it to draw up the leeches along with it into the rectum. When they have thus been conveyed up beyond the sphincter, the instrument is withdrawn, and the leeches are suffered to remain till gorged with blood and loosened from their hold, when they are drawn out by means of the threads which the operator retains outside the anus.'

Osborne observed, 'I have never used more than four leeches at once, in this way, fearing lest too great a haemorrhage might be produced.' Similar devices were constructed later in the century to allow leeches to be applied rectally to the prostate gland<sup>11</sup>.

## Vagina

Leeches were regularly introduced into the vagina to stimulate menstrual flow and to treat various feminine disorders. However, one obstetrician, Samuel Ashwell, found the leeches applied directly 'to the os uteri . . . [were] decidedly more beneficial than any other local depletion'. He pointed out that 'the speculum tube may be introduced into the vagina prior to their application; and if the cervix be brought fully into view, neither the vagina nor any other part than this portion of the congested viscus will be fixed on by the leeches'<sup>12</sup>. Ashwell recommended that this indelicate use of leeches be 'confined to married women' and that 'a clever nurse should be taught to apply them'.

## Multiple applications

While treatment of a single disease episode often involved only a few leeches, sometimes many more seemed to be required 'A gentleman [who] fell from his horse and severely bruised the elbow-joint' was treated by the application of 118 leeches over the course of four days<sup>13</sup>. Between 22 July and 3 August 1824, 130 leeches were applied to the inflamed testicle of a single gonorrhoea patient<sup>14</sup>. In four days, 160 leeches were applied to the abdomen of one woman in an unsuccessful attempt to save her from puerperal fever<sup>15</sup>; however, one year earlier a case of severe metritis, 'was subdued by the application of 220 leeches and two venesections within ten days'<sup>16</sup>.

## DRAWBACKS

There were various difficulties and dangers associated with the use of leeches. Leech bites, an obvious indication of recent medical treatment, could be embarrassing. Referring to treatment of testicular inflammation, Astley Cooper, the surgeon, observed that in private practice he saw 'persons in whom it is of the greatest consequence that a bleeding from these parts should be concealed'<sup>17</sup>. Cooper, recommended that, in such persons, rather than leeching, one should carefully use the lancet to open a few veins in the scrotum.

A more serious hazard was that leeches applied to the throat could suffocate patients, or be swallowed and then attach themselves within the lower oesophagus, 'thereby causing extensive mischief'<sup>18</sup>. This difficulty was controlled by attaching threads to the leeches that were to be used inside the mouth. Another common and serious drawback was that leech bites sometimes bled profusely and led to an excessive loss of blood; within a few hours, even the small bite of a single leech could become life-threatening. In 1819 Anthony White reported that a two-year-old girl had died from the loss of blood induced by a single leech<sup>19</sup> and similar deaths were described through the century. Physicians recommended that, where possible, leeches be

placed over solid internal tissue such as a bone, so that pressure could be applied to stop the bleeding. Alternatively, one should be prepared to stitch the bite together with a needle and silk thread<sup>19</sup>, or to employ cauterizing agents<sup>20</sup>, ligatures<sup>21</sup> or plaster of paris<sup>22</sup>.

Another risk was that the leech bite could itself become the focus of subsequent morbid processes. One physician advised against applying leeches to the eyelids, or to the scrotum or penis, because he had seen 'very violent inflammation, and even gangrene, result from it . . . an accident by which the reputation of the surgeon cannot fail to suffer'<sup>23</sup>. He also observed that leech bites could give rise to erysipelas. Another physician argued against the use of leeches in uterine disorders since they were seldom beneficial and the bites 'easily changed into as many cancerous ulcerations'<sup>24</sup>. There was also a persisting concern that reused leeches might themselves convey diseases from one person to another. Early in the century, Wilkinson did not believe that leeches 'which may have been previously applied to patients in the small-pox, measles, scarlet fever, venereal buboes, or other affections of this sort, or to cancerous, venereal, or phagedemic ulcers, bite of a mad dog, or any other specific disease whatever, will or can communicate a similar affection'<sup>25</sup>. However, reports occasionally suggested otherwise: in 1827 one article claimed that leeches had conveyed syphilis to a child after being used to treat a syphilitic patient<sup>25</sup>.

## SUPPLY

### Recycling and bdellotomy

The general expectation seems to have been that leeches should be destroyed after being used, but from early in the century there were attempts to reuse them. Wilkinson caused the animals to disgorge by applying salt to their mouths, and when unable to secure fresh leeches he used in rotation five different leeches 'for at least 50 times' over seven months. He pointed out that this could save considerable money and, even more significantly, by conserving leeches it was 'a principal means of preventing their future scarcity'<sup>25</sup>.

A few years later another physician, himself in need of leeching but unable to procure a sufficient number to do the job, hit on a similar method: as the leeches fell off, he immersed them in a cup of vinegar: . . . 'In this manner each of them was tortured four or five times, after which the whole were put into clean water, and appeared as lively as at the first'<sup>26</sup>. With methods such as these, physicians claimed that a given leech could be used as often as every third day and for as long as three years<sup>27</sup>.

Another way of conserving leeches was to cut open their digestive tracts so that they lost all the blood that they consumed and continued sucking without limit. This

technique was perfected by a German physician, Julius Beer, who called it bdellotomy. Beer claimed that some of his bdellatomized leeches had 'for six days running, performed their duties... passing off the blood either through the original wound or through a freshly made one'<sup>28</sup>. He thought that this technique would prove especially useful in treating children or persons suffering from diseases of the uterus or of the eye where there was space for only a limited number of leeches to become attached. Moreover, by suspending the posterior end of the bdellatomized leech in a glass container, one could retain and measure exactly the extracted blood. Thus, Beer claimed, his method had three advantages over conventional leeching: '1. Humanity suffers less; 2. Economy is promoted; and 3. Precision is introduced into the art of local-bloodletting'.

### Hirudiculture

At the beginning of the nineteenth century, leeches were generally harvested 'by the children of the poorer peasantry' who simply waded and splashed in the water and collected the leeches that became attached to their legs<sup>29</sup>. By the 1830s things had changed dramatically. In 1836 John Pereira wrote, 'The consumption of leeches must be enormous'<sup>30</sup>. He pointed out that, collectively, the four largest London dealers imported, on average, 600 000 leeches monthly or 7 200 000 a year. Most of these imports came from France, Germany, Silesia, and Poland<sup>31</sup>. By the middle of the century, there were improved techniques for harvesting leeches; this was accomplished by drawing nets with bait (usually the liver of a recently slaughtered animal) through the water. However, the harvesting in vast numbers meant that leeches soon ceased to exist in whole areas of England; it seemed likely that, within a decade, leeches would be extinct in western Europe. In England, a tax was levied on imported leeches for the purpose of fostering domestic production and thereby making the country 'independent of nations with which we might be at war'<sup>32</sup>.

The decline in the natural supply of leeches led to the development of leech farms and to the pursuit of hirudiculture. Anxious to ensure their own supply, medical faculties, hospitals, and some governmental units established their own large reservoirs in which leeches could be cultivated. Farmers began growing leeches commercially. The main problem in hirudiculture was supplying an adequate quantity of blood to enable leeches to breed and grow rapidly. At first, this was achieved by driving into the swamps

'wretched, lame, and worn-out horses. But these poor beasts, unfortunately, died too quickly for the leech-growers' account. . . . It is now found more economical to feed the leeches on cows. The heavy, dull animal,

haggard, frightened, and yet resigned to its fate, bears the onslaught of the leeches, which are attached like bunches of grapes to its belly and legs, with a sort of stupid surprise. . . . A breeder. . . who has four hectares of marshes, drives into them every year upwards of 200 cows and many dozens of donkeys for the nourishment of 800,000 leeches'<sup>33</sup>.

Through the 1830s, improved techniques for conserving and shipping leeches expanded the opportunities for trade. In January 1841 a sea captain bought 20 000 leeches in Madras, India. They were kept in earthenware tubs on the deck of his ship and received no special care. When the ship reached the Cape of Good Hope the captain sold the surviving leeches for a profit of more than £100 Sterling<sup>34</sup>. In the late 1840s leeches were regularly imported into western Europe by land and sea from Turkey and Egypt<sup>35</sup>, and in the 1860s vast numbers of leeches were exported from Australia to Europe and to America. In 1867, the Murray River Fishing Company of Sydney, Australia reported that '2,000,000 to 3,000,000 of leeches will pass through their hands this season'<sup>36</sup>.

The demand inevitably drove up prices. In 1804 Wilkinson reported that leeches in the Covent Garden market were eight or nine shillings a dozen, whereas 12 years earlier they had been three shillings a hundred<sup>7</sup>.

In a hospital near Nottingham, probably typical of English hospitals generally, demand for leeches crested in the 1830s and then fell in the next two decades; by the mid-1850s, annual expenditures for leeches were less than one-twentieth what they had been two decades earlier<sup>37</sup>. By 1879, one of London's major importers, a company that had formerly sold more than 30 000 leeches a week, was selling only one-tenth as many, 'most of which go to Scotland'<sup>38</sup>. Whatever therapeutic benefits they may have offered, leeches passed out of fashion.

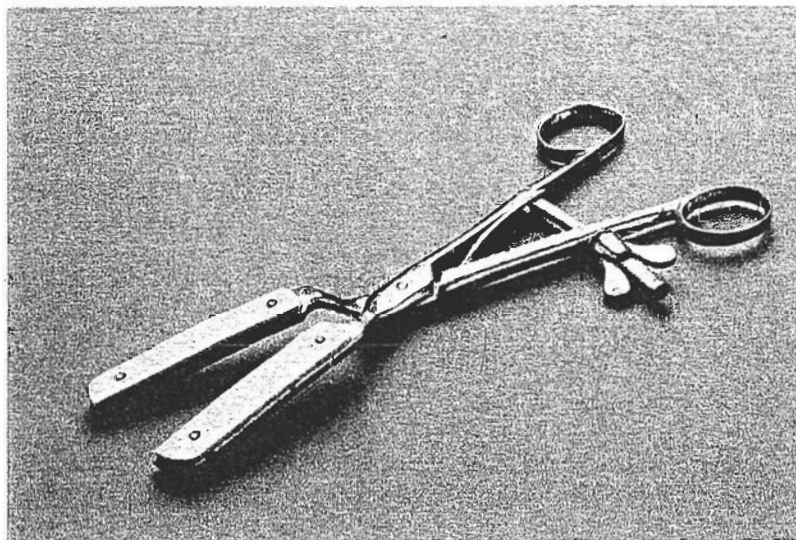
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## A LOOK BACK

# Hemorrhoid Clamp



The term hemorrhoid, signifying in the literal interpretation, “a flow of blood,” was used by Hippocrates. From the time of that celebrated physician, it has denoted dilation of the hemorrhoidal vein: “haemorrhoides nihil esse aliud quam varices venarum ani” (Morgagni).

This affliction has plagued society for millennia, and a variety of treatments have been advocated over the centuries. These have included hot cautery, wire ligature, crushing, sclerosing injections, rubber band ligation, cryotherapy, electrocoagulation, heater probe, and laser.

Pictured here is a cautery clamp, which has broad flattened compression blades. On its outer surface, each blade is covered by an ivory shield to prevent heat radiation from the steel portion of the instrument to the healthy tissue. The hemorrhoid is seized, and the blades are tightly compressed and secured by means of a crossbar and nut as shown. The cautery is applied to the metallic side of the jaw. This instrument dates from the mid-1800s.

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