apposition a considerable time before the lateral chinks are closed; the pulse continues to be transmitted until a more or less considerable excess of external pressure has been applied, over and above what is needed to stop the transmission of the pulse in a normal artery. The effects of continued or repeated compression in reducing the readings in such an artery find an obvious explanation in their demonstrated influence in reducing the resistance of the arterial wall by temporarily diminishing or annulling the contraction present, and so removing a factor concerned in inducing the peculiar form of closure above described in a sclerosed artery.

Resistance to Compression of Excised Arteries.

In view of the foregoing results, it may be asked whether the high resistance to compression recorded in strongly contracted surviving arteries, possessing thick muscular coats, is associated with a similar peculiarity in the mode of closure under external pressure or whether it is simply due to the direct resistance presented (by the rigid muscle) against distortion of the tube from the circular form.

The excised arteries in which very high resistances were encountered were always powerfully contracted, with rigid muscular coats and a very small lumen. The use of the term "contraction" in this connexion may be ambiguous; it may mean that the action of the (shortened) muscular fibres may be such as to reduce the lumen to very small dimensions; or, on the other hand, the muscle may be "contracted" and rigid while the lumen is not very small—for example, in presence of high internal pressure, under the influence of cold, etc.; in the latter case, the muscle may be firmer and more resistant without being much shortened.

In the case of a strongly contracted artery with a very small lumen, there is no evidence that the peculiar form above described ever occurs in such a way as to allow persistent passage of the pulse wave through lateral chinks. The small lumen seems always to close by a simple apposition of the walls of the tube.

We conclude that the excess of external pressure over internal pressure which is necessary to obliterate the pulse under those conditions is due to the direct resistance to distortion of the rigid muscular walls of the tube. But, as already stated, we find no ground for assuming the existence of anything resembling this degree of muscular rigidity in the vessels of the living subjects. At the same time, the presence of contraction—that is, muscular resistance—is very important in human arteries when associated with certain abnormal structural conditions, determining the occurrence of special features in the process of closure of the vessel by external pressure, and thus leading to different readings of obliteration pressure that do not correspond with differences in the actual systolic pressure.*

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* By "closure" is meant such a degree of occlusion as is necessary to stop the transmission of the pulse wave as tested on the peripheral side.

ED. SERGENT and L. Nègre have reported to the Society of Biology the results of the examination of the stools of sixty-seven pilgrims returned to North Africa from Mecca; they included thirty-six returned to Algiers and thirty-one to Morocco. Thirteen (10 per cent.) had dysenteric bacilli of the Flexner type in their intestines. The examination of the stools of a certain number of natives resident in the neighbourhood of Algiers who had not been to Mecca gave a negative result. In three of the returned pilgrims (4.5 per cent.) cholera vibrios were found in the intestines, and in two instances the vibrios presented all the true characters of the cholera vibrio. The pilgrims were all in good health, and the observations show that among those returning from Mecca there are carriers who escape existing sanitary measures. An abstract of the paper is published in the *Bulletin de l'Office International d'Hygiène Publique* for August, 1914.

THE BARBER-SURGEONS' COMPANY.

AN ADDRESS DELIVERED TO THE HUNTERIAN SOCIETY OF LONDON.

By THOMAS GLOVER LYON, M.A., M.D.,

PRESIDENT; SECOND WARDEN TO THE BARBERS' COMPANY, 1914.

ARMS OF THE COMPANY.

BY the kind hospitality of the Worshipful Company of Barbers, the Hunterian Society is now privileged to hold its meetings in a place associated for centuries with the medical profession.

In the year 1461 a corporation which had been solicited by Thomas Morsted, Chirurgien to Henry IV, was granted to Jacques de Fries, his physician, and John Hobbes, his surgeon, by Edward IV, in the names of St. Cosmo and St. Damianus, brothers, physicians and martyrs. This corporation was called the Company of Barber-Surgeons of London, and received authority over all practising the same arts in and about the metropolis.

In spite of this charter, however, many unqualified persons continued to practise. There is an interesting account of how quacks were punished in the minutes of the Company. In the fifth year of the reign of Richard III one Roger Clark was prosecuted for quackery, having given a piece of parchment rolled up and said to be inscribed with the words of a charm, to be used round the neck against fever. The culprit was convicted and sentenced to the following peculiar punishment: He was "led through the middle of the city with trumpet and pipe, he riding on a horse without a saddle, the said parchment and a whetstone for his lies being hung about the neck, and an urinal being hung before him and another behind."

Up to the reign of Henry VIII barbery and surgery were practised by the same individual, but even during this period members of the Company specialized in one branch or the other. Many of those favouring surgery went to the wars either in England or on the Continent. These were often financed by the barbers, who received a share of the large fees paid by the nobles and other wealthy men for surgical attendance. One can imagine how competent men were sought after, and how great were the sufferings of those who were unable to secure their services, by the following quotation from Gale:

I remember when I was in the Wars at Muttrel (Montreuil), in the time of that most famous prince Henry VIII, there was a great rabblement that looked upon themselves to be surgeons, some were sow gelders and some horse doctors, with tinkers and cobblers. . . . But when the Duke of Norfolk, who was the General, saw how the people did die and that of small wounds, he sent for me and certain other surgeons, commanding us to make search how these men came to their deaths, whether it was by the grievousness of their wounds or by lack of knowledge of these so-called surgeons. . . . In the end this rabblement were committed to the Marshalsea, and threatened by His Grace to be hanged for their worthy deeds except they would declare the truth who they were and of what occupation, and in the end they did confess themselves to be as I have declared to you.

In the third year of Henry VIII's reign (1512), a licensing body was created, whose approval was necessary before anyone could practise as a physician or surgeon in the City of London or within seven miles of it. This consisted of the Bishop of London, or Dean of St. Paul's, aided by four doctors of physic, and for surgery other persons of discretion "experts in this faculty." In spite of the existence of this body, in the thirty-second year of Henry VIII's reign (1541), the Barber-Surgeon Company was united to another company, the Company of Surgeons, by Act of Parliament. This Act divided the members of the Company into barbers and surgeons; the barbers were not allowed to practise surgery except bleeding and drawing of teeth, and the surgeons were not to practise barbery or shaving. The art of surgery to which the charter of 1541 refers comprised the care of "bruises, hurts, and other infirmities, the letting of blood and the drawing of teeth." There has always existed an antagonism

between physicians and surgeons, and we can imagine the words "other infirmities" led to frequent disputes. The same charter gives power to the governing body of the Company to make "statutes and ordinances for the wholesome government, superintendence and correction of the said mysteries, according to the necessities of the case." Power still remains in the Master of this Company to order to prison members who may have misbehaved themselves. The following appears in the minutes of the Company:

17th November, 1635. This day Wm. Kellett, being called here in Court for not making presentacon of one Mr. Kinnersleys maide that died in his charge, he saied here in Court that Mr. Doctor Harvye being called to the patient did upon his vew of the patient saie, that by the meanes of a boulister the tumor on the temporal muskle would be discussed and his opinion was that there was no fracture but the vomiteing came by reason of the foulness of the Stomacke, and to that purpose p'scribed physick by Briscoe the Apothecarye, soe the patient died by ill practice, the fracture being neglected and the Company not called to the vew.

The Mr. Doctor Harvye here mentioned appears to be no other than the discoverer of the circulation of the blood. If a severe case was "presented" to the authorities of the Company, the Master and Wardens visited the case without fee and arranged the treatment in consultation with the surgeons who had presented the case. Supervision and inspection is also given to the Company of "all kinds of instruments, plaisters, and other medicines and their recipes, by such barbers and surgeons given and applied and used for our liege men and curing and healing their wounds, bruises, hurts and such kind of infirmities." Here we get the words, "such kind of infirmities," still a somewhat indefinite expression. This charter also exempts practitioners from serving on juries and other like duties.

The method of procedure required of those wishing to become surgeons was as follows: The candidate was first apprenticed to a surgeon, a member of the Company, for five or seven years, and took up the freedom of the Company. Then, after a *viva voce* examination at the Hall, a preliminary certificate to practise for three years was granted. After three years of practice to the satisfaction of the authorities, a final certificate was granted, which enabled the Bishop's Seal confirmatory to be obtained. A silver spoon, engraved with the donor's name, was presented to the Company by all persons passing the examination, but out of many hundreds which must have been presented, only one—given by Jonathan Cheynell—remains. It is interesting to note that an apprentice undertook to devote the whole of his time to his master's service, except such as was given to Divine worship.

The charter of Henry VIII allotted the bodies of four criminals to the Company for dissection, but other bodies were purchased privately. The beadles of the Company used to proceed to the gallows to claim the four bodies, and often had to fight the relations of the culprit for possession. Sometimes in these unseemly brawls the clothing of the corpse was torn, and the Company possesses receipts by the hangman for sums in compensation for the damage done.

Regarding the possibility of resuscitation after hanging,

we find records relating to two cases. In Stow's *Annales* there is a story to the following effect:

A man hanged at St. Thomas Watering on February 20th, 1587, was cut down, stripped of his apparel, laid naked in a chest, thrown in a car, and brought through Southwark to the Barbers' Hall. The chest being open to the weather, extremely cold, he was found to be alive, and lived till February 23rd, and then died.

Apparently arising out of this incident, the following minute occurs in the Company's books, July 13th, 1587:

If any body shall revive and come to life, the charges about the same body shall be sustained by the person or persons who shall happen to bring home the body.

The second instance is recorded as follows by Mr. Joseph Wheeler, Clerk to the Company, in a rough minute:

November 23rd, 1740. This day Will Duell, who had been indited at the Old Bailey for a Rape and had received sentence of death for the same, was carried to Tyburn in order to be executed, where having been hung for some time was cutt down, and brought to the Company's Hall in order to be dissected, where he had not been five minutes before life appeared in him, and being let blood and other means used for his recovery, in less than two hours he sat upright, drank some warm wine, and looked round him before he was carried back to

Newgate, which was about twelve of the clock at night. He several times pronounced distinctly the word Don't when anybody touched him, though was thought to be mostly insensible of ought but pain, which in great measure he endured by his most violent moanings, and was after in strong convulsions in the bowels which he then expressed by applying his hands to this part. The Sheriff, having ordered him back to Newgate, he was carried in a blanket, putt into a coach, was seemingly much composed and quiet, not making any manner of noise. Within three days time he recovered sufficiently to converse and eat and drink very freely, but never could give any reasonable account of what had passed. He afterwards obtained a reprieve in order to be transported for life, which he was accordingly in his 16th year.

It is alleged that Duell changed his name to Deverel, and becoming a prosperous man, gave to the Company a handsome screen.

When we consider

the limited scope of the "mystery" over which the Company had control, it is not surprising to find that with the growth of surgery there arose the necessity for a body which would take a more comprehensive attitude towards this branch of the profession. Why the barber-surgeons did not reconstitute themselves according to the needs of the time I am unable to say, but as surgery advanced any alliance with barberry would naturally become strained. Moreover, municipal institutions, for some reason or other, have never succeeded in controlling and developing the higher branches of education. Sir Thomas Gresham intended to found a university connected with the corporate life of the City, but this object was never attained. It thus came to pass that in 1745 the control of the surgical practice of London and the education of practitioners, together with endowments attached to the latter, were alienated from the Barber-Surgeons, and vested in a new corporation, the College of Surgeons of London, which body in 1843 was styled the Royal College of Surgeons of England. In spite of the circumstances under which the new body was founded, the most cordial relations have existed between the old Company and the College of Surgeons. Many members of the College have joined the livery

Grace Cup presented by Henry VIII.

The "Royal Oak" (Boscobel) Cup, presented by Charles II.

of the Company, have been elected to the Court of Assistants, and passed the Chair, and at the Company's banquets the President of the Royal College of Surgeons, when present, is always the most honoured guest. The old Company, thereafter called the Company of Barbers, retained the Hall, together with the records and the works of art contained in it. The members of the Barbers' Company regard the custody of these treasures to be their special privilege and duty. Every opportunity for inspection is given to those who are likely to be appreciative, and probably no works of art receive more serious attention. Visitors have often expressed their satisfaction at being able to examine the pictures away from the chilling atmosphere of a public gallery, and to handle the cups instead of gazing at them in glass cases.

The site of the Hall, which originally included an extensive herbal garden, is chiefly interesting on account of its proximity to one of the residences of William Shakespeare, who lived, between 1598 and 1607, at the corner of Monkwell Street and Silver Street, and there wrote seven of his plays. He appears as a witness in the Court of Chancery in favour of his landlord's daughter, who had married an apprentice of her father's, the suit being for payment of a promised dowry. The present hall is part of a pile of buildings which included a large banqueting hall and lecture theatre, designed by Inigo Jones, whose portrait by Vandyck hangs in the hall. The lecture theatre was elliptical in shape, and the ceiling was decorated with the signs of the Zodiac. Against its walls hung the skeletons of two murderers. The table, of peculiar shape, used in this theatre for the display of anatomical specimens is preserved. The building survived the Great Fire of London in 1666, owing to the fact that it was surrounded by a large garden. The large hall and theatre were demolished only recently to make way for warehouses. The hall in which the Society is permitted to meet was the council chamber, and in it examinations were held. The ceiling is adorned with—or shall we say disfigured by?—several anatomical objects, and is a good specimen of the heavy decoration of the period.

The Company's coat of arms was granted by Elizabeth, and is a modification of a former grant by Henry VI. The actual grant of arms is a fine specimen of heraldic emblazonment. The interesting points of this coat from our standpoint are the flewmes or scrapers in two of the quarterings, representing the barbers, and the so-called spatter or spatia, encased in a rose and crown in two other quarters. This spatter is said to be a spatula, but I should say that it is a knife with a spearhead-shaped blade to represent the surgeons. The supporters are two lynxes, to typify the observant acumen which should be a characteristic of a surgeon. The granting of arms to a body of men who were exempt from military service must have presented to the King-at-Arms a humorous aspect, which I cannot help thinking he has slyly indicated in the crest or sign to be worn on the helmet in battle. He describes this as an *Opinacus*, but others have irreverently referred to it as the Barbers' Flying Jackass. It has the body and legs of a lion, the neck and head of an eagle, the wings of a griffin, and the tail of a camel. Truly, in Trinculo's words, "a most ridiculous monster."

Amongst the numerous treasures possessed by the Company is the gilt silver cup presented to it by Henry VIII. It is said by Mr. Stanley Gardiner, an authority on such subjects, to be the only personal relic of this monarch existing. It is a most beautiful specimen, graceful though simple in design, and of exquisite workmanship. It is ornamented with heraldic designs connected with the House of Tudor, including the rose and porteullis. Hanging round the bowl are little bells, the use of which was probably to call attention when the cup required replenishing. The picture of Henry VIII granting a charter to the Company in 1541 is a fine specimen of Holbein's work—at least, as far as the King's figure goes, and probably the most true to life of any portraits of Henry VIII. Holbein's portraits are all characterized by a photographic fidelity to life, and in this instance the painter was free from any obligation to please the original. Arrogance, sensuality, and cruelty, combined with high and broad-minded intellectual powers, determination, and generosity, are, I think, all expressed in the face and figure of the King. All the personages in the picture were celebrities, but three,

I think, are worthy of special mention. John Chambre, immediately on the King's right, was a man of many parts. He, like the old monks, combined the callings of physician and priest. He was physician to Henry VIII, and as Archdeacon of Bedford was one of the Convocation in 1536, when the Articles of Religion were framed. He was one of the founders of the College of Physicians. Dr. Butts, the second to the King's right, was the Dr. Butts mentioned in Shakespeare's *Henry VIII*. He attended Anne Boleyn through a serious illness, and was sent by the King to Cardinal Wolsey when the latter was taken ill after his disgrace. Butts preserved to the last the regard of this fickle monarch, who made him valuable grants of land. Thomas Vicary, to whom the King is giving the charter, was Master of the Company five times, and was Sergeant-Surgeon to Henry VIII, Edward VI, Mary, and Elizabeth. He was chief surgeon at St. Bartholomew's Hospital, and was author of the first work on anatomy published in English. It was entitled *The Englishman's Treasure*. Many have tried to acquire this famous picture, amongst others Samuel Pepys, who attempted to buy it for £200, and being told it was worth at least £1,000, remarked, "It is not a pleasant though a good picture." I may add that lately a would-be purchaser has added two noughts to Pepys's offer, and has received the answer, "This picture is not for sale."

A tankard which Charles I, at the instance of Thomas Fothergill, presented to the Company, is a contrast to a flagon of the time of the Commonwealth presented by Thomas Collins, professor of surgery. It always seems to me that the elegance of the Cavalier and the stolidity of the Roundhead are impressed upon the one and the other of these handsome pieces. The famous Boscobel cup was presented to the Company by Charles II at the petition of John Knight, surgeon to the King. This is the gem of the Company's collection, and in its lightness and grace, and even in its appearance of instability, is to my mind characteristic of the early Restoration. Its stem is in the shape of the trunk of an oak, somewhat twisted; the handle of the lid is a crown, and the usual little bells hang round the bowl. To four cups, presented by Edward Arris, founder of the Arrisian lectures, a melancholy history is attached, four men having been executed for a theft of them from the hall. Unpretentious like their donor, they are excellent in their simplicity. Of the pictures on these walls not already mentioned, one by Walker, sometimes called the English Vandyck, shows that remarkable man Sir Charles Scarborough giving a demonstration in anatomy, assisted by Edward Arris. Sir Charles was physician to Charles II, James II, and William III. He was a great mathematician, and applied for the first time the principles of mechanics to explain the action of the muscles. Sir Charles was a physician of the candid school, and is said to have remarked to the Duchess of Portsmouth: "Madame, you must eat less, use exercise, take physic, or be sick."

Scarborough assisted William Harvey in his book *De Generatione Animalium*. He was acting as surgeon in attendance to the Duke of York, afterwards James II, on board the frigate *Gloucester*, when it was wrecked on the Well Sands. He was picked up while struggling in the water, and never recovered from the effects of the cold and exposure. There is a second portrait of Edward Arris, this time a full-length one. When the surgeons parted from the barbers they took with them the endowment connected with the Arrisian lectures, but this money was somehow merged in the general funds of the new society or was misappropriated, and so the lectureship became an honorary one. This being pointed out to the council, the sum of the endowment was once more set aside to re-endow the lectureship. The initiative in this matter was taken by a past master of the Barbers' Company, Sir John Tweedy. A fine punchbowl was given by Queen Anne in acknowledgement of the services rendered by the Company in examining surgeons for the army and navy. A Sergeant-Surgeon of Queen Anne, Sir Charles Bernard, whose portrait hangs in the hall, was instrumental in obtaining this gift.

Amongst other works of art owned by the Company is the beautiful firescreen, a fine piece of ornamental iron-work presented by Sir John Tweedy and designed by Lady Tweedy. The waterman's barge and the banners formerly carried on the Company's state barge are also worthy of note.

During its career the Hunterian Society has had many habitations, but none will compare with our present sumptuous meeting place. I think I cannot more fitly conclude this address than by expressing the gratitude of the Society to our kind hosts the Worshipful Company of Barbers, and by repeating the time-honoured sentiment, "Root and branch, may it flourish for ever."

INSECTS AND WAR:

VIII.—MITES (PART II)

(*Demodex*; *Sarcoptes*; *Endo-parasitic Mites*).

By A. E. SHIPLEY, Sc.D., F.R.S.,

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Say what the use, were finer optics giv'n,
T' inspect a mite, not comprehend the heav'n.
POPE, *Essay on Man*.

Demodex.

We have seen that the harvest mite is wont to insert its head into the skin of human beings, but other mites show less restraint and insert their whole bodies. One of these, the well-known *Demodex folliculorum*, is, according to Guiart and Grimbert, "le plus commun des parasites de l'homme et nous en sommes presque tous porteurs." Without taking quite so gloomy a view, *Demodex* is undoubtedly widely distributed in the skin of mankind and of other mammals. There are differences of opinion as to whether this form should be split up into numerous species, or subspecies, according to the genus of the

mammals upon which it lives. We, at any rate, will confine our attention to the human kind (Fig. 1) and so avoid losing ourselves in the tortuous maze of synonymy and the arid discussion of a meticulous classification so dear to the analytical German mind. To us a *Demodex* shall be a *Demodex*, and we will leave it at that.

Unlike the majority of mites, *Demodex* is a good deal longer than it is broad. But even for a mite it is very small, and shows signs of bodily degradation associated with its parasitic habit of life. Its shape is adapted to its habitat, which is the sebaceous glands of the skin. The long abdomen appears to be segmented, but the annulations are not true segments. The legs are reduced to conical stumps. The male is 300 μ long and 40 μ * broad across the cephalothorax. The female is, as usual, larger, measuring 380 μ in length by 45 μ in breadth. The minute larvae have, as is so often the case with mites, but three pairs of legs and are 60 to 100 μ in length.

This parasite, which lives on all parts of the skin of the human body, is perhaps most commonly seen on the nose and in the passages leading into the ear. It can be expressed by firmly pressing over the black spot which indicates its presence on the skin of the nose or elsewhere any small cylindrical tube, such as a watch-key. When expressed it is not always easy to see, as coming away with it is a mass of sebaceous matter which can best be dissolved off with oil on the microscopic slide. Whether this particular parasite causes much disease is not known. But in some cases it is certainly associated with acne and other skin disorders, and as it is also found in hair follicles, it may possibly destroy the hair. It is apparently spread by personal contact.

Fig. 1.—(a) *Demodex* in hair follicle of dog. (b) *Demodex folliculorum* (highly magnified).

The Itch Mite.
A much more serious trouble is due to *Sarcoptes scabiei*, often called the Acarus, which gives rise to the disease known in England as the "itch" and in France as the "gale." *Sarcoptes scabiei* in both sexes is but little longer than broad. The female (Fig. 2) is, as always, larger

Fig. 2.—*Sarcoptes scabiei*. Female, $\times 180$. Ventral view. (From Bourguignon.)

than the male. These mites are shaped very much like a microscopic tortoise, of a pearly grey colour, passing at parts into a rusty brown. Of the four pairs of legs two run forward close to the head, and two point backwards. The integument is semi-transparent and strengthened by

Fig. 3.—*Sarcoptes scabiei*. Male, $\times 300$. Ventral view. The sucker on the fourth leg on the right is accidentally folded over the third leg. (From Bourguignon.)

parallel folds and bears many little bilateral symmetrical protuberances and scales. There are also certain hairs which have some systematic value (Fig. 3). The male is usually recognized by the fact that its third pair of legs terminates in a long hair, whilst the other legs end in a pedunculated sucker. He measures 200 to 235 μ in

* $\mu = 1,000$ th of a millimetre.