 know nothing of the publicist, the politician or the Prussian, this we do know: that the people who live in the hills and forests, the smiling villages and the medieval towns of South Germany are not the very worst people in the world.

As for their beautiful hills, wonderful forests, and fascinating dwelling-places—well, go and see for yourself.

You will not be disappointed.

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Echoes of the Past

A SURGEON OF THE RENAISSANCE.

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One of the treasures in the Royal Army Medical College Library is an original copy of an old work on Surgery, published in the year 1497 at Strassburg. The book which is in Old High German, was written by one Hieronymus Braunschweig, who was also the compiler of other medical works about this time, including one on the distillation of drugs and another on plagues and infectious diseases. The compass of this work on Surgery can be gathered in brief from his foreword and the headings of the six different sections into which the work is divided.

His foreword reads as follows:—

"Here beginneth this book in Surgery which is called the Practice of Wound Surgery of Hieronymus Braunschweig, Surgeon in the Imperial Free Town of Strassburg, as he hath taught it and as he followeth it in his practice."

The work consists of six parts or treatises which are headed thus:—

I. Medical knowledge and what is seemly and the custom.

II. Wounds and their treatment in general.

III. Wounds from head to foot in detail.

IV. Blows and bruises.

V. Fractures, how one sets and binds them.

VI. Medicines, how to make them."

These sections are each divided up into chapters where the subjects are dealt with in detail. The book is well illustrated with woodcuts which are remarkably good, and are in themselves illustrative to a high degree of the practice of surgery of those times.

The chief fame of the book, however, rests on the fact that one of its chapters deals with gunshot wounds, and is the first article ever printed dealing with wounds produced by this then new weapon. A natural
curiosity to read this chapter was readily followed by the desire to read other portions of the book, and these indeed were found in many cases to be even more interesting than the former. The book is beautifully printed in Gothic characters, and although the language is somewhat archaic it is not difficult to understand when one has once become accustomed to the irregularities in spelling and grammar which are treated with the easy carelessness of a man who has not had to learn his mother tongue by means of school tasks. Indeed, Hieronymus himself (in the preface) apologizes for his Latin, the grammar of which he admits is bad, though he says he has read over 3,000 books and converses daily in that language. Unfortunately, also, the present-day names of some of his herbs and drugs are not known. He quotes freely from masters of medicine of ancient and mediæval times, such as Hippocrates, Galen, Razis, Ali Abbas, and others, and so it is difficult to know how much of the compilation is original and how much of the surgery he writes was already known in his time. But this is evident from his work, that he was a shrewd observer and skilled teacher, and withal a kindly soul who was concerned over the sufferings of unhappy wretches condemned to be tortured on the wheel, and concocted draughts for them with the object of producing narcosis. With frequent repetitions he preaches that there can be no healing of wounds without cleanliness. In another place he recognizes that missiles from firearms may sometimes be left to heal in situ, and they will be covered over and do no harm. One of the illustrations shows a mal-united fracture being broken to bring about healing in a straight position. This he recommends the patient desires it, and it will be seen later that some of the popular remedies used in the Middle Ages were not always so nonsensical as we are apt to think.

But, to study the work in more detail, let us take for example the aforementioned chapter on gunshot-wounds which reads in its entirety as follows:

"The 10th chapter of this treatise sayeth, if someone hath been shot with a gun and the powder hath poisoned the wound, or where the ball remaineth where it cannot be seen in the wound."

Item, further:

"If one should be shot with a gun and the ball be unclean and poisoned with the powder, and some of the powder still remaineth there; be it in one arm or leg or wheresoever the ball hath gone through then shalt thou take a hare's wool? cord and press that through the hole and draw it backwards and forwards leaving no place untouched and thus wilt thou get the powder out of the wound. By doing so the wound will not become foul. Then canst thou put into the wound a wedge of fat spread over and smeared at the same time with hot oil or fat and though it be a ball from a musket or powder or a poisoned arrow yet it taketh all the poison unto itself so that no poison remaineth in the hole to make the wound unclean. Then treat it with good plasters or take of oleum rosarium half an ounce, and of
turpentine a quarter ounce and of powdered camphor a drachm and mix them well with one another and bind over it a little of this. This draweth out the matter and poison. But one must give the patient at all times of Tiriak¹ a drachm with wine therein and steeped in castor. If however, thou wert in the open field where thou mightest very well have no medicines whatever then thou shouldst take goat's or cow's milk. But goat's milk is the best wherewith to wash the wound.

"Further if one is shot with a ball from a gun and the ball is still in the body then enlarge the hole with a knife if it be possible as hath been before described in this book in dealing with arrows and other things. Then thou shouldst have a musket ball tongs and with this thou shouldst neatly and subtly grasp it in the wound, then with this seize the stone and pull it out. If it be such, however, that thou canst not enlarge the wound or cut there then take thou the iron instrument that is called a stork's bill or leek and push this into the wound as far as the ball and bring the ends of the instrument together behind it. Thus the edges of the wound can be separated from each other and so canst thou insert the tongs to take out the stone. But if it were such that thou couldst not find the ball then do as Count Johann von Dockenburg did to the King of Hungary as will be hereinafter described.

"Further I have verily heard of a man, Hans Ulrich, of Baden, who was called to a man who had been shot with a gun. The ball was still within him but none knew where it lay other than that he got pain there in the body thereafter. Thereupon Hans Ulrich from the dukedom of Baden bade him put his arms round his belly and press, and from the pressure and breathing of the man the ball was driven forward into the outermost skin of the belly so that all could perceive and grasp that the ball was there. He thereupon cut on to it and brought it out with the bullet tongs. As many masters who were there present before him can well testify.

"Further if one be shot with a gun and the bullet still remaineth there and thou canst not reach it with the bullet forceps to pull it out, or thou canst not cut down on to it for fear of causing death thereby, altho' knowing where it lieth, then shouldst thou enlarge the wound with a knife and then, having enlarged the hole, take the herb named 'Ehrenpreis,' and also the herb known as 'Mass Lieblein' and mix these two herbs up well one with the other and press this into the wound and bind the wound in the evening over this. Then of a surety wilt thou find it in the morning lying at the wound and verily that is so even if it lieth deeply and is hidden when thou must wait longer and dress it in this wise on other evening, but if it be not deep and lying free at the wound and if the wound be wide then it cometh away the more easily."

In the above the bullet forceps to which he refers several times is an instrument of which there is an illustration in one of the woodcuts and

¹ Tiriak: a favourite remedy in those days for snake bite.
which is a combination of two pairs of forceps on the same screw, and the outer pair of which has sharp edges on the outside while the inner pair is an ordinary straight forceps. On pressing the outer handles the outer forceps cut outwards on each side, and thus extend the wound; the inner forceps can then be used as straight forceps to grasp the object. Very similar instruments are in use to-day.

The incident of Count Johann von Dockenburg which he mentions refers to the occasion when the King of Hungary was wounded in battle and the iron point of the arrow was stuck in his arm and could not be located. The arm was bound tightly above the wound which was then painted with a salve of bolus, vinegar, camphor, oil of roses and white of egg. Presumably by means of the congestion and this counter-irritant the iron arrowhead came up to the surface of the arm and was pulled out without forceps.

It is pleasing to learn that the skilful surgeon was raised to the nobility by his grateful patient.

Hieronymus has also much to say that is interesting on the subject of narcosis. In speaking of enlarging a wound to permit of the extraction of an arrowhead he says "if the cutting do him too much harm then give to him this drink, making him drunk, by which he sleepeth and feeleth not the cutting. Take the following:—

Salatrium mortale.
Semen iusquiam (hyoscine).
Papaver albus.
Papaver niger.
Opium thebaicum.
Croce orientalis.
Cortex mandragora.
Lignum aloes.
Cinnamomum.
Castor.

and from these roots make a powder and take thereof two drachms and soak in Malvasier wine and give it to him to drink."

At another place when speaking of victims of the wheel he recommends a mixture of the following substances:—

"之夜"halade
Hyoscyamus
Mohn
Opium
Croceus, and
Mandragora."

It is with little surprise that one learns that in a book published some twenty years ago after the publication of Master Braunschweig's work, the reader is warned against the too energetic administration of this (the second) narcotic as fatalities were resulting therefrom. But we know that about this time professional torturers and executioners were able to increase their emoluments by providing their victims with this as a stupefying drink shortly before the commencement of the official proceedings in return
for a satisfactory financial recompense from the condemned man or his friends and relatives. In these circumstances one hardly expects that the hangman was over careful in measuring out his ingredients, nor would the patient be likely to be over particular even if he had reason to believe that the maximum dose had been exceeded in one or two cases. So that it would not perhaps be altogether fair to blame Hieronymus for these untimely deaths.

What he says in dealing with the treatment of cases taken off the wheel is very interesting. The passage reads, "Where a man has been on the wheel and has been taken off the wheel alive then bury him one day and one night in warm horse dung (Ross Mist) so that the limbs are extended and slightly bent and give to him a cunningly mixed food which is easy to digest and thereafter so bind him each leg separately as I shall teach thee in the fifth treatise dealing with fractures. And if it be the case that his back is broken then should one lay him on an iron table covered over with felt but first bind him with a plaster . . . and a hole should be left opposite the buttocks' so that he need not be much moved."

In this torture of the wheel, which seems to have been a very common form of punishment, about the time this book was written, as it has a chapter to itself and there are numerous references to it, the victim seems to have been wound in and out and over and under the spokes and rim of an ordinary cart-wheel with the result that all the long bones in both upper and lower limbs were broken, but as the blood-vessels were not as a rule torn, the poor wretch remained alive tied to his wheel until he died of pain and starvation unless he was allowed to be taken down. As regards these latter one sees pictures of them in old woodcuts with the most amazing deformities and progressing by the only method of locomotion left to them, viz., crawling.

There is another method of torture referred to in the book, and by this method people first had their hands tied behind their backs, then they were jerked upwards by a rope tied to their hands so that their arms were over-extended backwards, and heavy stones were tied to their ankles. By this torture the joints, especially the shoulders, were torn and dislocated, and the head of the humerus was often broken off. Speaking of these Hieronymus says that the limbs should be put back into place again as the Henckers (executioners) are so good at doing. It would almost seem that surgery was a minor accomplishment of the hangman of those days.

In dealing with hemorrhage he teaches clearly the tying of a bleeding vessel in an open wound, but some of his medicinal remedies for arresting bleeding are not so modern. One has the merit of simplicity, and it could not be said that this method would not apply to-day. He says, to stop bleeding, put the patient in the dark so that he cannot see the bleeding, and then tell him it has stopped. This method would appear to anticipate both Christian Science and suggestion. But it is his styptics that really take us with him back to the Middle Ages. One of these remedies recom-
mended by him as a wound powder consists of white incense, aromatic adstringentium, and powdered eggshell, to which dried and powdered earthworms should be added. The worms should be dried in an oven and made into a powder the moment they are dry enough to allow of this being done. Though this may sound fantastic and absurd, it may not have been without its virtues in those cases for which it was intended, for it would seem at least as reasonable to imagine that extract of earthworm would aid coagulation as to believe that extract of leech could retard it, and this latter we know to be the case. But, nevertheless, one would hesitate nowadays to recommend wrapping in horse manure for the treatment of joint injuries, even though in practice this, too, might be found to have a virtue all its own.

For the resuscitation of the apparently drowned we are recommended the method practised by Ali Abbas, which was to hang the patients up by the feet to let the water run out of them and thereafter to give them vinegar with a decoction of pepper to gargle.

In conclusion, as one might believe from reading the above quotations, the general impression obtained on reading this old work on surgery is that the practice of medicine and surgery in those days, at least in the larger towns, was not so hopelessly steeped in ignorance as we are rather apt to believe.

Doctors of repute, like our worthy Master Braunschweig, obviously taught classes of pupils, as can be seen from the woodcuts alone, and the introduction of printing was proving of great service in standardizing such teaching and spreading it all over Europe. The profession, too, seems to have stood in higher repute at this time than at later periods, and skilful treatment seems to have then held the prospect of rich rewards.

It is therefore no mean thing to have such an old and precious work in our possession, and we should be proud to recognize the worthiness of its writer to a place amongst the immortals of our profession.

Current Literature.


The author is of opinion that the most common point of contact for the infecting droplets, in the case of particles of saliva and nasal mucus ejected by influenza patients, is the conjunctiva. Furthermore, infections by dust also gain access to the nasal fossae through the lacrimal duct. He refers to the American method of prophylaxis of hay fever by the use of goggles and of conjunctival applications of pollen antitoxin.

During a severe epidemic of influenza among recruits, he made use of