THE REMAINS OF WILLIAM HARVEY.

By BENJ. W. RICHARDSON, M.D., F.R.S.

My late beloved and honored friend, Dr. Robert Willis, of Barnes, in his life of Harvey, describes, after Aubrey, the death and burial of our greatest English anatomist. On the third day of June, 1657, about ten in the morning, Harvey, then in his eightieth year, on attempting to speak, found that he had lost the power of utterance—that, in the language of the vulgar, he had the dead palsy in his tongue. He did not lose his other faculties, however; but, knowing that his end was approaching, he sent for his nephews, to each of whom he gave some token of remembrance—his watch to one, his signet ring to another, and so on. He further made signs to Sambroke, his apothecary, to bleed him under the tongue; but this did little or no good, and by and by, in the evening of the day in which he was smitten, he died, the palsy giving him an easy passport. The funeral took place a few days afterward, the body being attended far beyond the walls of the city by a long train of his friends of the College of Physicians, and the remains were finally

Fig. 1.—PROFILE OF BUST—WILLIAM HARVEY.

deposited in a vault at Hempstead, in Essex, which his brother Eliab had built. He was lapt in lead, and on his breast, in great letters, his name, "Dr. William Harvey." "I was at his funeral," continues Aubrey, "and helped to carry him into the vault." This is the brief account of the placing of the remains in the vault of the church at Hempstead, and there they still remain, probably in precisely the same position as they were left by Aubrey and his colleagues two hundred and twenty-one years ago.

Hempstead is a village about seven miles from Saffron Walden, and the best way for those who wish to pay a pilgrimage to it is for them to take the train to Saffron Walden, and from thence by carriage on to Hempstead. They will find no obstacle in the way of seeing the vault and the remains; on the contrary, they will have a willing and intelligent guide in the sexton, Mrs. Ford, who lives close by, who has the keys of the church and vault, and who will give much very useful and correct information respecting the Harvey Chapel, the vault, and the various members of the Harvey family, many of whom, as well as the anatomist, are buried at Hempstead.

In my early life I lived for nearly two years in Saffron Walden, assisting the late Mr. Thomas Brown, surgeon of that place. Some time about Christmas, 1847, I was attending, in her accouchement, the wife of a cottager at a village called Radwinter, near to Hempstead; and, while waiting in the night, I heard from the husband of my patient an interesting story of the chapel and vault of the "great Dr. Harvey." Gradually it dawned on me that the Harvey re-

Fig. 2.—HARVEY MEMORIAL TABLET AND BUST.

ferred to must be the discoverer of the circulation of the blood. On further inquiry I found this to be the fact. Very soon, as may be expected, I visited the church; and a year or two later, when I became acquainted with Dr. Willis, whom for a time I joined in practice at Mortlake, I reported to him the condition of the remains for a proposed new edition of a life of Harvey, which he had at that time in

contemplation, apart from the edition of the Sydenham Society, which he had already prepared and brought out.

As far as I could learn in 1847, the vault containing the remains of Harvey had not then been visited by men of science within the memory of any person in the village of Hempstead, neither had any one been curious about it. The villagers said they knew Dr. Harvey was a very great man, who had, they had heard, made some great discovery, but they did not know what it was. They held the whole of the Harvey family, however, in much reverence as an old county family of high distinction, with merchants and knights, and even baronets, connected with it. At that time the vault had been long and grievously neglected. The vault was practically open to the public, for the window in it at the eastern end was uncased and badly barred, and the leaden shell in which Harvey lies on the floor was exposed to drift of rain whenever the rain beat in from the east, and was, in fact, altogether unprotected. Boys could throw stones upon the leaden sarcophagus, and did so. Indeed, it is not too much to say that any unscrupulous antiquarian, corrupted to theft by the desire of possession of a great relic, might with the utmost ease have purloined the remains of Harvey,

DOCTOR
WILLIAM • HARVEY •
DECEASED • THE • 3 •
OF • IVNE • 1657 •
AGED • 79 • YEARS

Fig. 3.—INSCRIPTION ON BREAST-PLATE OF SARCOPHAGUS, FROM A RUBBING OF THE PLATE.

without much fear of detection. At that time there was a small rent almost through the lead, on the upper surface of the shell, in the upper third of its length from the feet. The leaden case was also beginning to bend in over the middle of the body, looking like a large scoop or spoon, in which water could accumulate; but whether at that time water had permeated into the shell I cannot say. I think it had not.

In 1859, a visit to the remains was made by Drs. Stewart and Quain, at the request of the Royal College of Physicians. Their report was very exact and accurate. At the time of their visit the case was probably full of dirty water, which had, I have no doubt, got into it through the crack or opening to which I have referred, which had become enlarged, and which had penetrated quite through the lead.

Some repairs were made in the vault after the visit and report of Drs. Stewart and Quain, and in 1868, when I made another of my pilgrimages to Hempstead, the vault looked comparatively fresh, clean and dry. The window had been barred; either a new entrance had been made into the vault or the old one had been very much improved; many of the other coffins and leaden cases in it, containing the remains

Fig. 4.—HARVEY'S BURIAL PLACE—HEMPSTEAD CHURCH FROM THE WESTERN SIDE.

Fig. 5.—HARVEY'S BURIAL PLACE—HEMPSTEAD CHURCH FROM THE EASTERN SIDE.

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of the members of the Harvey family, had been neatly arranged, and the sarcophagus containing Harvey was both dry and clean. By this time, however, the opening in the sarcophagus had become so large that two or three fingers could easily be introduced into it. Mr. A. Haviland, Dr. L. Sedgwick, Mr. Stear of Saffron Walden, the late Dr. Forbes Winslow, and some other friends, were with me on this occasion, and while I was examining the opening in the case or shell, Winslow holding a lamp I had brought with me, a frog leaped out of the opening. I tried to throw a light, by reflection, through this opening into the case, in order to determine if any part of the body was still in the case, but was unable to arrive at a satisfactory conclusion on the point. There was no water in the case then. At this visit in 1868 I paid more attention than I had previously done to the Harvey Chapel within the church. In the wall of the church is a memorial tablet or monument of Harvey himself. In the recess of the monument is a marble bust of Harvey, and on examining the bust I was first led to the conclusion that the sculptor had copied from a cast of the face taken after death.

On July 19th of the present year, in company with my friend Mr. Thomas Woolner, R.A., and my son Bertram, I paid another visit to Hempstead, having with me Mr. F. T. Day, of Saffron Walden, to take photographic views of all that might be of interest and importance in connection with Harvey. The skill with which Mr. Day has fulfilled his task deserves the highest commendation. He has produced a series of the most beautiful photographs, from five of which Mr. George Evans, with great fidelity and artistic taste, has produced the drawings which accompany this narrative.

In describing from this last visit, I am led naturally from one subject to another by the views themselves. The church, as will be seen from the fourth sketch, which represents the western end, stands out quite alone, and is on rising ground. It is, I believe, a church of the reign of Henry the Seventh, though some parts are said to be much older. The Harvey Chapel dates from the time of William Harvey, the vault having been built by his brother Eliab. Within the church is what is called the Harvey Chapel. This is situated at the northeast corner of the church, to the left of the altar as you stand before it. The chapel is a handsome little ruin over the vault, and it contains several monuments of the family. It has a window looking to the north, to the left of which are two monuments—one to Admiral Sir Eliab Harvey, who was born on the 5th December, 1758, and died on the 20th February, 1830, and another to Lady Louisa, the wife of the Admiral, who died on the 4th December, 1841, at the age of eighty-four. The Admiral was the last descendant bearing the name of Harvey. He was the third son of William and Emma Harvey. He died at Roll's Court. The Admiral had three sons, all of whom died in his lifetime, and two of whom lie in the vault with him at Hempstead. He left six daughters—namely, Mrs. Lloyd, Mrs. Drummond, Mrs. Bramston, Mrs. Towers, Lady Eustace, and Mrs. Fane.

On the right hand side of the window of the chapel are three monuments. One, nearest the window—a large tablet—contains the account of Harvey's brother Eliab, the merchant, of the two daughters of Eliab (Sarah and Elizabeth), of his wife (Mary), of his eldest son, Sir Eliab Harvey, Knight, who died February 20th, 1698, aged 64; of Matthew, the son of Sir Eliab, who died in 1692, aged 23 years, and of some other members of the family. The next monument from the window on the right records the death of William Harvey of Roehampton, who died on August 13th, 1719, at the age of 80; and of his wife. On the third monument is recorded the death of William Harvey of Chigwell, and of his wife, parents of the Admiral above named.

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Turning round from the chapel into the aisle of the church, and looking westward, there is, on the right hand, in the wall of the church, and raised so high that the upper part of it is in a line with the spring of the roof of the aisle, a marble tablet or monument containing the bust of William Harvey (Fig. 2). The ornamentation of the tablet is bold and effective, and below the bust is the following inscription, which is here literally rendered from a photographic copy:

GVLIELMVS HARVEIVS
Cui tam colendo Nomini assurgunt omnes Academiae
Qui diurnum Sanguinis motum Post tot Annorum
Millia Primus inuenit
Orbi Salutem Sibi immortalitatem
Consequutus.
Qui ortum et generationem Animalium Solus omnium
A Pseudophilosophia Liberavit.
Cui debet
Quod sibi innotuit humanum genus Seipsam medicina
Sereniss: *Maiesat: JACOBO et CAROLO* Britanniarum
Monarchis
Archiatrus. et charissimus
Colleg: Med: Lond: Anatomes et Chirurgiae Professor
Assiduus. et Felicissimus.
Quibus Illustrem Construxit Bibliothecam
Suoq: Dotavit et Ditavit Patrimonia.
Tandem
Post triumphales
Contemplando. Sanando. inueniendo.
Sudores.
Varias domi forisq: Statuas Quum totum circuit
Microcosmum Medicinæ Doctor ac Medicorum
Improles Obdormiuit.
III°. IVNII. Anno. Salutis Cl^o ICCLVII. Aetatis LXXX°. Annorum et Famæ Satur.

There have been many portraits of the great anatomist, but, for reasons I am about to give, the bust which stands above this inscription is, I think, the most interesting of all. In studying the bust in 1869, I came, as I have said, to the conclusion that it must have been copied from a cast of the face of Harvey, taken after his death. I was, however, unwilling to trust my own judgment on this point, and therefore it was that I asked Mr. Woolner to accompany me on the last occasion of my visit, and to give his opinion on the subject. Mr. Woolner was good enough to comply with this request, and, after a very careful examination, he too has come to the decisive conclusion that the bust was from an after-death cast. Every part of the evidence, Mr. Woolner tells me, points to this decision. The features are those of a face dead. The sculptor, whoever he might be, has exhibited no knowledge of sculpture, except when he was copying what was directly before him. With the cast of the face for his copy, he has shown true artistic delineation, but all that he has been obliged to add to make up the bust as it stands is of the worst possible quality. The ears are placed entirely out of position; the large redundant head of hair is alto-

gether out of character, imaginary, and badly executed, and the drapery of the shoulders is simply despicable. We have, nevertheless, to thank the rude sculptor for the care he has devoted to the face, and we are enriched by the knowledge, supplied to us by the greatest of living English sculptors in our day, that the true lineaments of William Harvey, as they were seen at the time of his death, are in our possession. These lineaments indicate a face at once refined, reflective, and commanding, a far nobler portrait of the man, as I think, than any that has passed to us from the hand of the painter. In order to get the features, as shown in the bust, into the sharpest possible outline, I instructed Mr. Day to raise his camera so as to take a photograph in profile, in such position as Mr. Woolner felt would give the most perfect view. The result left nothing to be desired, and in the first drawing the profile is reproduced with singular fidelity. If the reader will turn the page round so as to make the face look upwards he will see William Harvey as Aubrey, Sir Charles Scarborough, and other friends saw him before the solderers closed his body in the shell which still remains.

THE VAULT AND SARCOPHAGUS.

In the fifth engraving the reader will find the eastern view of the church at Hempstead; and if he will look at the lower building on the right-hand side, he will see a double arched window and a door, with a tombstone between them. Immediately behind that tombstone is the window in the wall of the vault beneath which the foot of the sarcophagus containing Harvey lies. To enter the vault we have to go a few steps along the side of the building which looks to the north, and in which there are two windows. In the ground beneath the first of those windows is the entrance that leads down to the vault. Two folding trap-doors give the admission down a flight of brick steps. When we reach the bottom of the steps, we find ourselves in a rather large room, with brick floor and almost flat ceiling, with another vault beyond, the door of which is nearly opposite. To the left, as we stand at the foot of the steps looking northward, is the little east window of which I have spoken, and beneath which, with his feet towards it, lies Harvey. By his side, in leaden shells like to his own, lie several other members of the Harvey family; and in the extreme left-hand corner are coffins one above another. All the leaden shells or cases have on them inscriptions, that immediately next to Harvey being rather long, but still very legible; it describes one Matthew Harvey, who was at the battle of the Boyne with William of Orange.

To obtain a picture of the sarcophagus containing Harvey himself I lighted up the vault with the magnesium light, and thus enabled Mr. Day to take with this light, and with the light of the sun from the window, the photograph from

These dimensions were taken with the idea that they might have afforded evidence of the stature of Harvey during life. They evidently do not give the least evidence on this point. Harvey was a man of small size, and the case in which he was buried was obviously made of much greater dimension than was required.

In the upper surface of the leaden case, at the point where the depression is most determinate, is the large crack, or opening, to which reference has already been made. This crack is fully six inches long. Owing to the greater collapse and the sinking in of the lead, the fissure is not so wide as it was in 1868; indeed, the edges are now closed to a space of half an inch at the widest part.

The question which interests us most has yet to be considered: Are any remains of Harvey left in the sarcophagus? Expecting to find the opening in the lead in the same condition at my latest visit as it was at the latest but one, I took with me a small mirror, a magnesium light, and every appliance for making what may be called a sarcophagoscopic investigation. To my dismay, I discovered that the opening is now almost closed by the collapse of the lead, so that the reflector could not be used; while the shell is positively filled, at the opening, with thick, dirty fluid, like mud—a fluid thick as melted pitch, and having a peculiar organic odor. This extends into the case above and below the crack or fissure. There can be little remaining of the body; not much, probably, even of the skeleton.

In this brief recital I have, I trust, carried the readers of the *Lancet* with me to the last that is mortally left of William Harvey. One duty more lies before me—namely, once again to urge that these honored remains, though they are now better preserved than they have been in some times past, and though little of them may exist, should be conveyed to their one fit and final resting-place—Westminster Abbey. There, laid two feet deep in the floor, in some quiet corner, and covered merely with a thick glass plate, the leaden sarcophagus, still visible to those who take an interest in one of the most remarkable men in the history of science, would be protected for ages, instead of being destined, as it now certainly is, to fall into a mere crumbling, unrecognizable mass, in the course, at furthest, of another hundred years. —*London Lancet*.

MILK AS A VEHICLE OF CONTAGION.

By ALEXANDER R. BECKER, M. D., Berkeley, California.

AMONG the many questions now agitating the scientific world there is, perhaps, no one of more vital importance than the germ theory of disease; and, up to the present time, at least, the most important application of this theory

FIG. 6.—INTERIOR OF VAULT, AND SARCOPHAGUS CONTAINING REMAINS OF HARVEY.

which the engraving (Fig. 6) has been drawn by Mr. Evans. The precise position and form of the sarcophagus is thus brought to view. It is the sarcophagus on which the light is falling from the window, and on which the breastplate is indicated.

The sarcophagus containing what there still may be of Harvey lies direct on the floor of the vault, and has never, I believe, been raised on any support. The attendant at the vault declares that it has never been moved from the position in which it is now placed. Speaking from first recollections, I believe that in 1847 no other cases were near it; but I made no measurements until this last visit, and no correct notes, so I cannot speak positively; and, as at Drs. Stewart and Quain's visit, it lay in the center of a row of twelve other similar shells, my memory may be at fault.

The leaden case or sarcophagus is roughly shaped out in the form of the body. The head part has the rude outline of a face, with mouth, nose, and eyes; and the neck is wide and the shoulders expanded. The breastplate is broad, and the inscription upon it is in raised letters. The third engraving gives the inscription from a rubbing. The body of the sarcophagus is long, and tapering towards the feet. At the feet the lead turns up as if to receive the feet at a right angle to the body. In the middle of the shell, extending from the middle of the trunk to the feet, the upper surface has now collapsed, so that the inner upper surface of the lead all but touches the lower inner surface. This collapse of the lead is very much greater than it was ten years ago.

The following are the measurements of the sarcophagus, taken by my son, Bertram Richardson, on July 19th, 1878:

	Ft.	Ins.
Extreme length from crown of head to toe...	6	3
Breadth across shoulder.....	1	9
“ “ pelvis.....	1	4
“ “ feet.....		7
Depth, measuring from the surface line above to the floor of the vault—at shoulder...	10	
Ditto at pelvis.....	6	
“ at ankle.....	5	
“ at foot, heel to toe.....	8	
Breastplate.....	12 inches by 8	

has been to the so-called zymotic diseases. These diseases are also attracting close attention on account of the fearful ravages caused by them, every year, in our cities, as well as in the rural districts. Any light which can be thrown on their origin and spread must, therefore, be hailed with satisfaction.

There is one source which, we think, has not been sufficiently insisted upon, although it has attracted more attention in England than in this country; and that is *milk*. How many householders ever think of inquiring where their milk supply comes from, or what are the sanitary conditions of the farm or dairy whence it comes? In several of the States there are “milk laws,” and some of our large cities have “milk inspectors,” who examine the milk, more or less carefully, for “adulterations.” But no care of chemical or microscopical analysis can discover the infinitely more dangerous disease germs or contagia. If the disease germs be present in the water which supplies the dairy they will surely get into the milk, either innocently, through the necessary washing of the cans, or wrongfully, through intentional “watering.” Or, if they should be present in the atmosphere, they would naturally be attracted and absorbed by a fluid so rich in nitrogen and water; which would also afford them a pleasant resting place until, by its consumption, they could reach an appropriate nidus.

In England, several epidemics have been directly traced to the milk which came from dairies where the water supply was found to be contaminated. In one case—at Bolton—forty-seven out of fifty families supplied from the same dairy were smitten with typhoid fever. On examination, the water supply of this dairy was found to have been polluted by the dejections of a typhoid fever patient.*

When we remember the utter carelessness which prevails in the country generally, on the subject of drains and privies, and their position relative to brooks and wells, we must stand appalled at the resultant danger. And here we find a very probable origin of many of our city epidemics. Moreover, we see that, in order to make our milk laws and milk inspection effective, they must be extended so as to cover all milk farms, with their dairy buildings, system of

* See paper by Dr. John Dougall, Medical Officer of Health for the Burgh of Kinning Park, Glasgow; *Glasgow Medical Journal*, May, 1873, p. 312. Also, “Eighth Annual Report of the State Board of Health of Massachusetts,” 1877, p. 122.