The fourth fasciculus of anatomical drawings (re diseases of the heart and blood vessels), selected from the Collection of Morbid Anatomy in the Army Medical Museum at Chatham

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THE

FOURTH FASCICULUS

OF

ANATOMICAL DRAWINGS,

SELECTED FROM

THE COLLECTION OF MORBID ANATOMY

IN THE

ARMY MEDICAL MUSEUM

AT

CHATHAM.

DRAWN ON STONE BY GEORGE H. FORD.

LONDON:

PRINTED BY RICHARD AND JOHN E. TAYLOR, RED LION COURT, FLEET STREET.

M.DCCC.XLI.

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Is Inscribed

IN TESTIMONY OF DEEP RESPECT,

AND WITH FEELINGS OF THE GRATEFUL RECOLLECTION OF THEIR SURVIVING BROTHER OFFICERS,

TO THE MEMORY OF

DR. BURKE, DR. STRACHAN, AND DR. M'LEOD,

INSPECTORS GENERAL OF ARMY HOSPITALS:

OFFICERS WHO TERMINATED THEIR PUBLIC CAREER IN INDIA,

IN WHICH TWO OF THEM ARE INTERRED,

AND WHO,

DURING THEIR LONG AND DISTINGUISHED SERVICES IN EVERY QUARTER OF THE WORLD,

CONTRIBUTED MOST LIBERALLY TO THE VARIOUS INSTITUTIONS OF THE MEDICAL OFFICERS OF THE ARMY,

AND IN PARTICULAR TO THEIR MUSEUMS AND LIBRARY.

PREFACE.

THE three Fasciculi which have already been published,—in illustration of preparations contained in the Pathological Museum at Fort Pitt, Chatham,—have been of a miscellaneous nature in relation to their contents. This, the fourth, is, agreeably to the wishes of the Director-General, of a different description, consisting solely of representations of one class of diseases,—a plan which has been adopted with a view not only of concentrating interest, but also of rendering the publication more complete in itself, and therefore, it is to be hoped, more useful. Now that the collection of morbid preparations, formed by the united efforts of the Medical Officers of the Army, is rich in valuable materials, no difficulty will be hereafter experienced in continuing the plan which has been commenced.

In the Preface to the Third Fasciculus it was stated, that, as Government had afforded increased accommodations for the collections of the Department at Fort Pitt, it was hoped that the future progress of the Pathological collection would be even greater than the past, and it is gratifying to find that such has actually been the case. The following numbers show the total amount of objects of each great compartment, and the additions which have been made during the last two years :—

Morbid Anatomy 2834, including 518 additional.
Natural Anatomy 796, including 111 additional.
Comparative Anatomy 971, including 231 additional.
Experimental Physiology 102, including 2 additional.

As diseases of the Heart and Blood-vessels constitute the subject of this Fasciculus, it has been deemed adviseable to annex a Table so constructed as to convey an idea of the nature of all the Morbid Preparations of those parts which are contained in the collection at Fort Pitt.

Fort Pitt, Chatham,
24th May, 1841.

A TABLE

Showing the number and description of Morbid preparations of the Heart and Blood-vessels which are contained in the Pathological Museum of the Medical Department of the Army at Fort Pitt, Chatham.

I. Preparations showing Morbid conditions of the Pericardium, etc. 55

viz.

General adhesion of the Pericardium to the surface of the Heart	14
Partial adhesion of the Pericardium to the surface of the Heart, the non-adherent parts coated with lymph	9
Lymph, under various forms, effused both on the surface of the Heart and lining membrane of the Pericardium, without adhesions	25
White patch of Corvisart	3
Cartilaginous degenerations on the surface of the Heart	2
Partial ossification of the Pericardium	2

II. Preparations showing Morbid states of the Valves of the Heart, etc. 82

viz.

Semilunar Valves of the Aorta more or less ossified	10
Semilunar Valves of the Aorta more or less ossified, with hypertrophy of the left Ventricle	1
Semilunar Valves of the Aorta more or less ossified, with hypertrophy and dilatation of the left Ventricle	6
Thickening of the Semilunar Valves of the Aorta	7
Thickening of the Semilunar Valves of the Aorta, with hypertrophy of the left Ventricle	1
Thickening of the Semilunar Valves of the Aorta, with hypertrophy and dilatation of the left Ventricle	8
Thickening of the Semilunar Valves of the Aorta, with dilatation of the left Ventricle	3
Warty excrescences on the Semilunar Valves of the Aorta*	6
Warty excrescences on the Semilunar Valves of the Aorta, with hypertrophy of the left Ventricle	2
Warty excrescences on the Semilunar Valves of the Aorta, with hypertrophy and dilatation of the left Ventricle	1
Cartilaginous thickening at the points of junction between the Semilunar Valves of the Aorta	3
Semilunar Valves of the Aorta coated with calcareous deposit	2
Ulcerated openings in the Semilunar Valves of the Aorta	2
Mitral Valves more or less ossified	5
Mitral Valves more or less ossified, with hypertrophy and dilatation	2
Mitral Valves more or less ossified, with hypertrophy and dilatation of left Auricle	2
Thickening of the Mitral Valves	7
Warty excrescences on the Mitral Valves	5
Mitral Valves coated with calcareous deposit	1
Mitral Valves thickened and ulcerated	3
Warty excrescences in the left Auricle arising from the margin of the auriculo-ventricular opening	2
Thickening of the Semilunar Valves of the Pulmonary Artery	1
Tricuspid Valves more or less ossified	2

III. Preparations showing Hypertrophy of one or more of the cavities of the Heart with or without dilatation; the Valves not diseased 10

viz.

Hypertrophy of the left Ventricle	2
Hypertrophy and dilatation of the left Ventricle	3
Dilatation of the left Ventricle	3
Dilatation of the right Auricle and Ventricle	1
Dilatation of all the cavities of the Heart	1

IV. Preparations showing Aneurisms of the Heart and Arteries 114

viz.

Aneurismal tumour arising from the left Ventricle	2
Aneurism of the ascending portion of the Aorta	35
Aneurism of the arch of the Aorta	34
Aneurism of the descending portion of the Thoracic Aorta	11
Aneurism of the Abdominal Aorta.	12
Aneurism of the Subclavian Artery	4
Aneurism of the Arteria Innominata	4
Aneurism of the External Iliac Artery	1
Aneurism of the Femoral Artery	2
Aneurism of the Popliteal Artery	6
Varicose Aneurism, Brachial Artery	1
Partial dilatation of the ascending portion of the Aorta	2

* One of the preparations showing these excrescences was taken from the body of a boy aged seven years.

V. Preparations showing bony deposit in the Heart and Arteries 67

viz.

Bony deposit under the lining membrane of the left Ventricle	1
Bony deposit on the surface of the right Ventricle	1
Bony deposit in the coats of the Aorta	42
Bony deposit in the coronary arteries	3
Bony deposit in the Ductus Arteriosus of a boy aged five years	1
Bony deposit in the Ductus Arteriosus of an adult male	1
Bony deposit in the common Iliac Arteries	1
Bony deposit in the Femoral Artery	6
Bony deposit in the Tibial Artery	2
Bony deposit in the Internal Carotid Artery	4
Bony deposit in the Arteries of the Brain	5

VI. Preparations showing fibrinous coagula in the Heart, Arteries, Sinuses and Veins . . 44

viz.

In the right Ventricle	4
In the left Ventricle	3
In the Pulmonary Arteries	2
In the Descending Aorta	1
In the External Iliac Artery	1
In the Internal Carotid Artery	1
In the Arteries of the Brain	1
In the Superior Longitudinal Sinus	4
In the right Internal Jugular Vein	1
In the Pulmonary Veins	1
In the ascending Vena Cava	3
In the common Iliac Veins	4
In the External Iliac Veins	4
In the External Iliac and Femoral Veins	4
In the Femoral Vein	7
In the Vena Portæ	2
In the Splenic Vein.	1

VII. Preparations showing miscellaneous diseases, etc. of the Heart, Arteries, and Veins . . 35

viz.

Ulcers on the inner surface of the left Ventricle	1
Abscess in the parietes of the left Ventricle	1
Calcareous concretion, the size of a pigeon's egg, in the left Ventricle	1
Ecchymosis on the surface of the Heart	1
Cartilaginous degenerations in the lining membrane of the right Ventricle	1
Ulcers on the inner coat of the Aorta	18
Ulcers on the inner coat of the Aorta, and incipient Aneurism	1
An ulcerated opening in the Vena Cava	1
An ulcerated opening in the superior Mesenteric Vein	1
Obliteration of the Arteria Innominata at its origin	1
Obliteration of the Subclavian Artery at its origin	1
Obliteration of the left Carotid Artery at its origin	2
Rupture of the Coats of the Aorta from falls	4
Rupture of the Meningeal Artery from a fall	1

The Pathological Museum at Fort Pitt contains 28 preparations in addition to the above, showing malformations, etc. of the Heart, Arteries and Veins.

PLATE I.

Represents coagulable lymph effused under various forms, both upon the surface of the Heart and the lining membrane of the Pericardium—consequences of Pericarditis.

Fig. 1. Exhibits the serous surface of the Pericardium, as also the reflected layer on Heart, extensively coated with coagulated lymph, varying in thickness in different situations; that covering right ventricle and septum cordis is thickest, and presents a minute granular appearance; that on the left ventricle and on the opposed serous membrane of pericardium is smooth, polished and thin.

Case. Private John Adams, 69th Regiment, æt. 26. Admitted into the General Hospital, Fort Pitt, for Chronic Dysentery, March 1818, in a state of great debility, on his return from India, where he had suffered from hepatic and dysenteric affections. In a fortnight after admission into the Hospital he was seized with oppressed breathing, frequent cough and difficult expectoration; pulse small and quick, varying from 100 to 122 in a minute; countenance anxious; anorexia and œdema of lower extremities. The alvine evacuations, which on his admission were fourteen in the twenty-four hours, had decreased to one; he complained of pain in the hepatic region, to which he had been subject for the previous twelve months; the cough and expectoration increased, dyspnœa became more urgent, the abdomen was enlarged, and an obscure sense of fluctuation perceptible. The pain extended from the hepatic to the splenic region, and was much increased by pressure; regular exacerbations of fever, at one o'clock daily, were now added to the patient's sufferings and continued up till his death, which took place on the eighteenth day from the attack of dyspnœa.

Sectio Cadaveris.—Four pints of serous fluid were found in the right side. The pleura costalis and pulmonalis were much thickened by the effusion of coagulable lymph on their opposing surfaces. The structure of both lungs was healthy. The pericardium contained a pint of fluid and adhered to the heart at some points. The heart itself was enlarged; its serous covering, and also the serous lining of the pericardium, coated with lymph as represented. Liver more than twice its natural size. On cutting into the right lobe an abscess was discovered, which contained four pints of pus, the substance of the lobe being almost completely destroyed, so that on the evacuation of the matter it collapsed like a bag; the upper part of the sac was formed by the diaphragm; there was also a small abscess in the left lobe, and another isolated between the diaphragm and pericardium. There were strong adhesions between the liver and abdominal parietes at the third false rib; marks of ulceration in the rectum; remainder of intestines healthy.

Fig. 2. Shows a considerable quantity of coagulable lymph effused on the serous surfaces of the heart and pericardium, which near the base of the heart and along its anterior aspect presents a well-marked lace-like or honey-combed appearance. The pericardium is thickened, and large masses of lymph are seen hanging from its serous membrane.

Fig. 3. Exhibits enlargement of the Heart with effusion of lymph on its external surface; also effusion of lymph on the inner surface of the pericardium, organized and varying much in density and character, being reticulated, honey-combed, granular, and in masses.

Fig. 4. Shows the cardiac and pericardiac serous surfaces coated with a thin stratum of lymph, presenting an appearance much resembling the pile of plush.

The only particulars known relative to the preparation are, that it was obtained from the body of a Private of the 47th Regiment, who complained of rigors, headache, tendency to syncope and erratic pains: death ensued on the third day from his admission into Hospital.

Plate I.

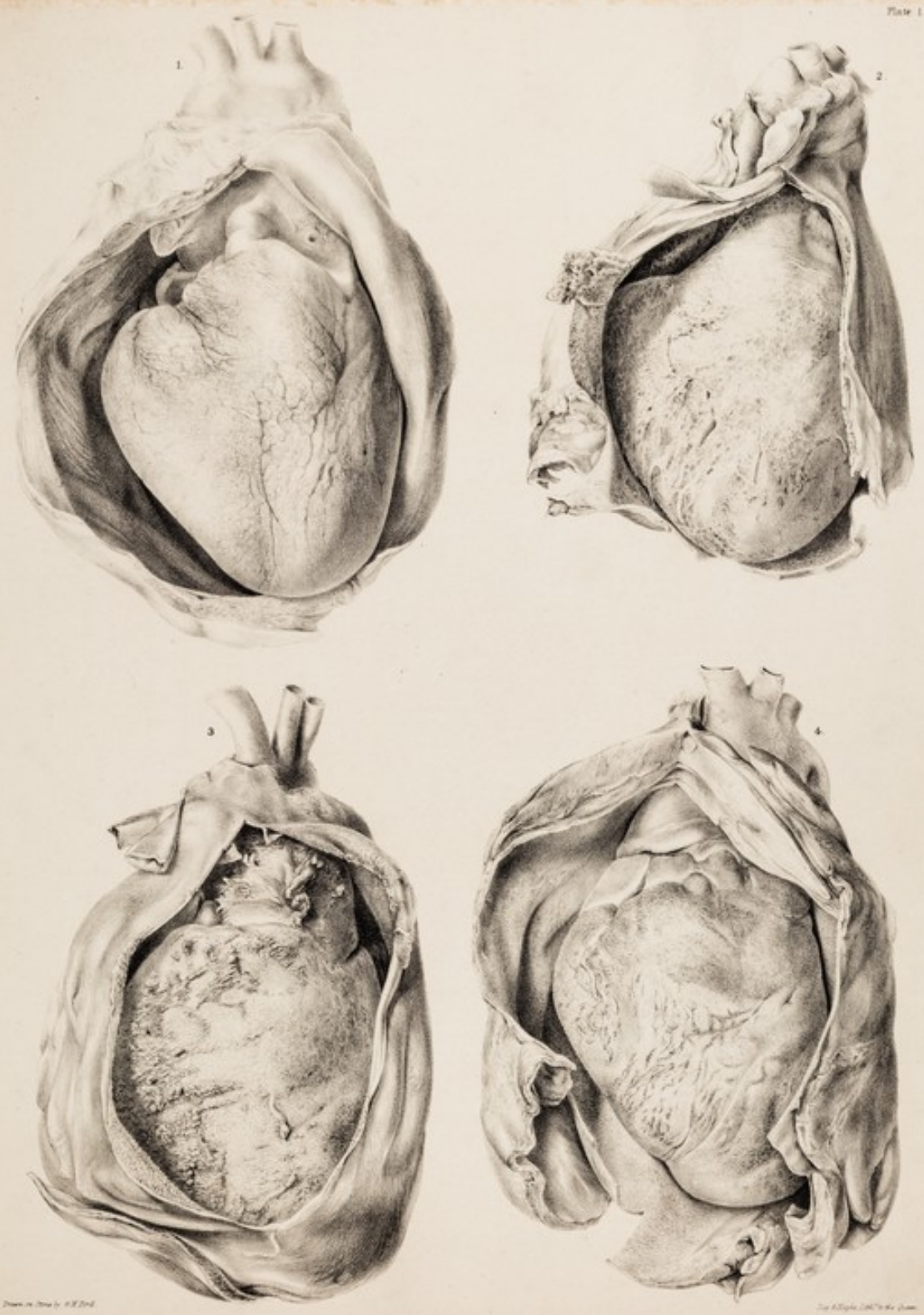


PLATE II.

Represents coagulable lymph, effused under various forms, both on the surface of the Heart and the lining membrane of the Pericardium—consequences of Pericarditis.

Fig. 1. Exhibits the pericardium thickened, and its serous membrane throughout covered with organized lymph, which, especially over the auricles and origins of the great vessels, is extended into numerous shreds and flocculent prolongations.

No history attainable.

Fig. 2. Shows the lining membrane of the pericardium and surface of the heart coated with a thick layer of plastic lymph, by which in many places, particularly at the apex of the left and at the upper and back part of the right ventricles, they are closely united. The opposed serous surfaces at the anterior aspect of the heart are smooth. The pericardium itself is much thickened, apparently from inflammation of long duration. The parietes of the right ventricle much thinned.

The only particulars known respecting the preparation are, that it was obtained from the body of D. D., 7th Veteran Battalion, æt. 45, who, after having been discharged from Hospital, cured of remittent fever, was shortly afterwards admitted with cough, difficult respiration, oppression at the chest, and a weak, irregular pulse. He died on the third day from his second admission.

Fig. 3. Copious deposit of soft spongy lymph on the surface of the heart, presenting a reticular and flocculent appearance,—the result of acute inflammation.

The preparation was obtained from the body of a child, æt. 13 months, who died at Malta. The symptoms of the disease resembled those of Pneumonia. The right lung, however, was found to be sound, the left adhered by recently effused lymph to the costal pleura.

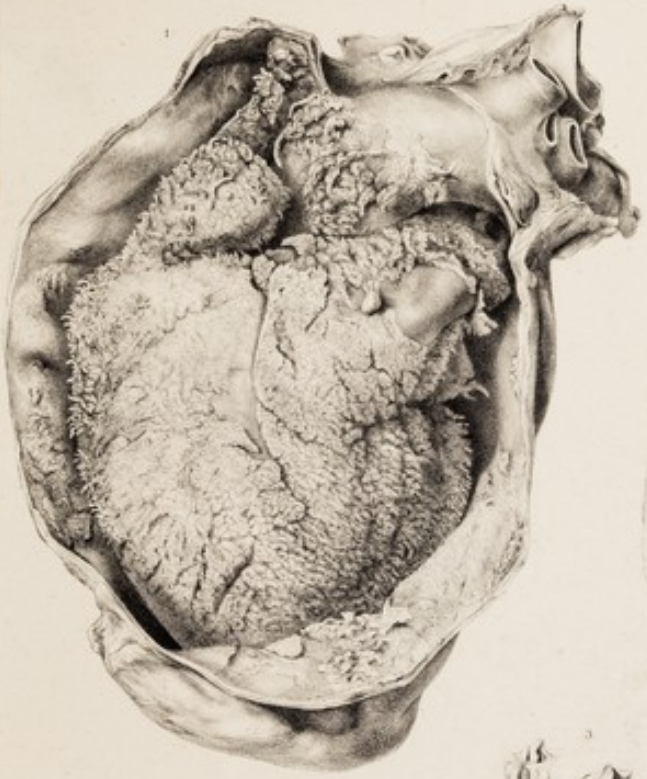
Fig. 4. Pericardium thickened, and its inner surface, as well as the surface of the heart, presenting numerous papillæ and pendulous excrescences of lymph, most remarkable along the thin edge of the heart.

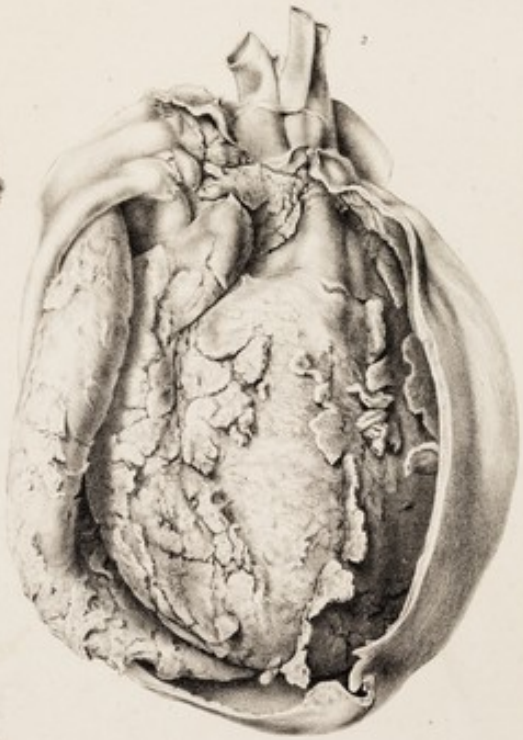
Case. J. L., æt. 42, 9th Regiment. Was admitted into Hospital, complaining of rheumatic pains in his limbs. His constitution was much impaired, and soon after his admission an abscess formed at the inferior costa of the right scapula, followed by numerous others on the upper part of the trunk. He subsequently sunk, with all the symptoms of hectic fever. On examination, it was discovered that both lungs had formed adhesions to the pleura costalis, and that the left was firmly attached also to the pericardium. The parenchyma of lungs was healthy. The pleural cavities contained five pints of dark serum, and five ounces of a sanious fluid were found in the pericardium. The heart presented the appearances represented in the Plate.

Fig. 5. Exhibits the pericardium thickened, lined with firm reticulated lymph, and connected posteriorly to the surface of the heart, which is also covered with lymph, by rounded cords whose length varies from half an inch to two inches.

Case. J. J., æt. 18, 69th Regiment, was admitted into Hospital with symptoms of Pneumonia, which he attributed to his having worn a damp shirt. The disease, although active treatment was employed, terminated fatally on the seventh day. On dissection, the vessels of the brain were found considerably distended; the lining membranes of the trachea and bronchiæ highly inflamed; the lungs contained crude tubercles; and the heart and pericardium were in the condition shown in the Plate.

Plate 3





Drawn on Stone by J. B. Ford

Imp. & Engrav. Lith.r to the Queen

PLATE III.

Represents various morbid conditions of the valves of the Heart and Aorta.

Fig. 1. Exhibits extensive osseous deposit (*a*, *a*, *a*) in the substance of the mitral valve.

Case. J. W., æt. 40, 36th Regiment, was admitted into the General Hospital, Fort Pitt, with habitual dyspnœa increased by exertion, ascites, and anasarca of the inferior extremities; pulse eighty-six, hard, strong and jerking; face pallid and œdematous. Sounds of the heart audible over the whole chest, and generally accompanied by "*bruit de soufflet*," more distinctly marked on the right side of the sternum than elsewhere; impulse of the heart very strong, and each pulsation attended by a corresponding movement of the head. These symptoms, particularly anasarca, gradually increased until death, which took place suddenly, thirty-one days after admission. On examination after death, the left auricle and ventricle were found much enlarged; the cavities of the right side but little changed. In addition to the appearance represented in the drawing, two small fleshy excrescences were discovered attached to one of the semilunar valves of the aorta, and, immediately above these valves, that vessel presented a small pouch-like dilatation.

Fig. 2. Exhibits osseous deposit (*a*) under the lining membrane of the left auricle, which involves a great part of the circumference of the left auriculo-ventricular opening, and base of the mitral valve. On the auricular aspect of the opening a considerable portion of the osseous surface is bare and ragged (*b*), the endo-cardiac membrane at the part being completely absorbed.

From the body of a soldier of the 42nd Regiment, who died of Pneumonia. No suspicion was entertained during life that any disease of the heart existed.

Fig. 3. Shows laceration (*a*, *a*) of two of the semilunar valves of the aorta, thickening of these valves from ossific deposit, and slight hypertrophy of the walls of the left ventricle of the heart. The coats of the aorta, immediately above the origin of the coronary arteries, are studded with scales of osseous matter, some of which are quite bare, whilst others are still covered by the attenuated lining membrane. At other points, opacity of the coats of the vessel is observed, arising from atheromatous deposit.

History of the case unknown.

Fig. 4. Exhibits partial thickening of, and osseous deposit (*a*) in, the sigmoid valves of the aorta, as well as an irregular ridge of ossific matter (*b*) in the coats of that vessel, immediately above one of the sinuses of Valsalva, which extends over nearly one-third of its circumference. The ossific deposit, as in the two preceding Figures, is at some parts bare; at others still covered by the lining membrane.

Case. W. W., æt. 53, 17th Foot, was, on his arrival from India on the 20th of May 1823, admitted into the General Hospital, Fort Pitt, with symptoms of chronic dysentery, and stated that during a period of fifteen years' service in that country he had suffered from repeated attacks of the acute form of the disease. About four months previously, whilst on the passage home, the relapse, in consequence of which he was admitted, took place. Seventeen days after admission, he complained of pain in the lower part of the right side of the chest, increased by cough or full inspiration, and said that he had at different periods suffered from pain in the same region. These symptoms, to which was added delirium, increased in severity, and he died three weeks after admission. In addition to the diseased state of the aorta and its valves above pointed out, were found hepatization of the right lung, with marks of old, as well as recent, ulcerations in the large intestines.

Fig. 5. Represents wart-like excrescences (*a*, *a*), involving the whole extent of the free margins of the aortic valves, and containing a copious deposit (*b*) of a calcareous substance. The interior surface of two of the sinuses of Valsalva presents numerous small warty irregularities, interspersed with opaque spots, resulting from deposition of atheromatous matter. In the bottom of the middle sinus, shown in the drawing, may be seen an oblique fissure (*c*), which extends through the whole thickness of the aortic coats. In the preparation, this sinus, when examined externally, is found to be considerably dilated, and near the most convex point exists the fissure above described.

Taken from the body of a soldier of the 7th Fusileers, æt. 28, who died suddenly: further history unknown.

Fig. 6. Exhibits general adhesion of the pericardium to the heart and disease of the mitral and semilunar valves, accompanied by slight atheromatous deposit in the coats of the aorta, within and immediately above the sinuses. The semilunar valves are at many points thickened, and present on their free margins wart-like excrescences (*a*, *b*) interspersed with nodules of bony matter. The apex of one of the divisions of the mitral valve presents a large fringe of fleshy excrescences (*c*), with small growths of similar character attached to several of its chordæ tendineæ. The surface of the other portion of the valve likewise exhibits several excrescences near its apex, around which its structure is somewhat thickened.

Case. Private T. C., æt. 31, 84th Regiment, was admitted into the General Hospital, Fort Pitt, on the 21st of January, 1820, on his arrival from India, where he had served nine years, and had frequently suffered from hepatic disease. At the time of admission, or soon after, he complained of the following symptoms: oppression about the præcordia, acute darting pain in the chest, uniformly aggravated by cough or full inspiration, with dull pain, increased by pressure, in the right hypochondrium; to the latter, he stated he had been subject for a period of six years; and also, that he had for some years suffered from dyspnœa, frequently attended by pain in the left side. A few days after his admission, the pain in the left side of the chest was distinctly referred to the situation of the cartilages of the sixth and seventh ribs, as well as occasionally to the lower edge of the left scapula, and, on coughing, to the right mammary region. Respiration was usually hurried and oppressed, particularly in the recumbent posture; the countenance sharp, pale, sallow, and highly expressive of anxiety. The pulse, at first firm and averaging from 90 to 100, subsequently became more rapid and irregular; the pulsations, during the time of examination, frequently varying in character. These symptoms went on gradually increasing in severity until the twenty-third day after admission, when he died, retaining his mental faculties to the last.

Sectio Cadaveris. Lungs sound: slight effusion into both pleural cavities. Heart and pericardium as shown in the drawing. Slight effusion into the cavity of the peritoneum. Abdominal viscera to all appearance healthy.

Fig. 7. Exhibits two pendulous wart-like excrescences (*a*) attached to the upper margin of the left auriculo-ventricular opening of the heart. Besides these, several others of a smaller size are seen in the preparation around the bases of the two shown in the Plate; and also a slight warty irregularity of the auricular aspect of the mitral valve.

History unknown.

Fig. 8. Shows pendulous vegetations (*a*, *a*) from the semilunar valves of the aorta; rupture of one of the valves (*b*), extending about half its breadth, with several spots of atheromatous deposit in the coats of the aorta.

Case. A. B. was affected with general anasarca and most distressing dyspnœa, accompanied by a diffused and forcible but not irregular action of the heart. He died three days after his reception into Hospital. On examination, the heart was found greatly enlarged, the aortic valves as delineated, and the lungs highly œdematous.

Plate 3.

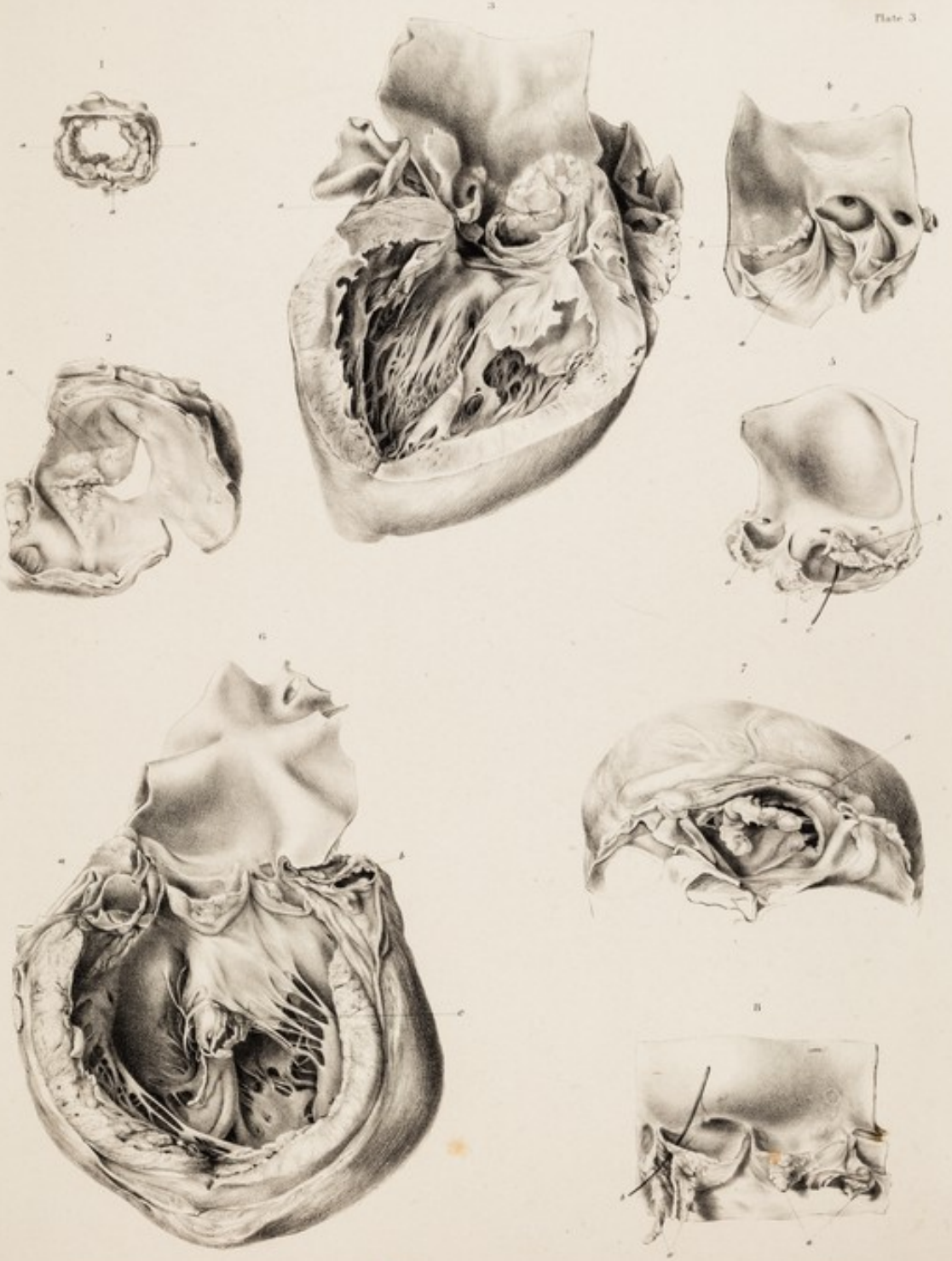


PLATE IV.

Represents various diseased states of the valves of the Heart and Aorta.

Fig. 1. Exhibits the semilunar valve of the aorta (*a*), corresponding to the sinus from which the left coronary artery is given off, extensively ruptured at its base, widely separated from the inner surface of the aorta, and loaded with a fringe of warty excrescences, one of which (*b*) is remarkable for its size and the slender pedicle by which it is suspended in the cavity of the ventricle.

Fig. 2. A second view of the same preparation, showing the posterior surface of the mitral valve slightly thickened at some points, and having at its base two pendulous wart-like excrescences (*a*). To obtain this view of the surface of the diseased valve, an incision has been made posteriorly through the wall of the left ventricle, commencing at the margin of the left auriculo-ventricular opening, and extending in the direction of the apex of the heart.

Case. Private J. L., æt. 33, Rifle Brigade, of regular habits, was admitted into the General Hospital, Fort Pitt, on the 20th of June, 1818, suffering under inordinate action of the heart, with throbbing throughout the whole arterial system. These, together with other symptoms to be afterwards described, he reported as having existed in an urgent form during the two days prior to his admission; and he added, that after the fatigue of a march, about twelve months previously, he had suffered from a somewhat similar, although less violent attack, from which he had never perfectly recovered. In addition to the above symptoms, he complained of pain referred to the epigastrium, which was greatly aggravated either by pressing over the region of the heart, or under the left false ribs when pressure was directed *upwards*, but not when made in the opposite direction: such pressure seldom failed instantly to produce cough, which was also sometimes occasioned by a full inspiration. Decubitus was easiest at first on the left side, but subsequently on the back, with the head and shoulders somewhat elevated. Pulse 100, full, strong and throbbing; respiration difficult, with occasional cough, generally accompanied with some mucoid expectoration in the morning. On exertion, or on attempting to ascend an eminence, the circulation and respiration soon became preternaturally excited, producing suffering so intense, that, to avoid falling, he was suddenly compelled to stand still. During the progress of the disease, he occasionally suffered from frontal headache and vertigo, and started from sleep with a sense of impending suffocation. The urine was generally high-coloured, and about three weeks before death he lost three pints of blood from epistaxis. The pain complained of on entering the Hospital occasionally alternated with a feeling of oppression. The action of the heart was frequently laborious, strong, diffused, evident to the eye, and accompanied by throbbing vibratory pulsation of the carotid arteries. Under this accumulation of urgent symptoms, debility rapidly increased, respiration became more and more oppressed, and he died at seven o'clock on the morning of the 20th of July, in a state of restlessness and anxiety scarcely to be described. The patient attributed the origin of his disease to exposure to cold and wet during the last three years of his life. He had served in the Peninsula, and in the expedition to Walcheren, and during his service in the former he had suffered from dysentery, and in the latter from intermittent fever; but it would appear he had perfectly recovered from the effects of both, previous to the commencement of the fatal disease.

Sectio Cadaveris. Besides the appearances given in the drawing, the following are reported to have been observed: the heart enlarged, the adjoining portion of the lung pushed upwards, and the external surface of the former, particularly that of the left ventricle, exhibiting marks of previous inflammation. The walls of the left ventricle were much thickened, and the inner surface of the left auricle inflamed. The external surface of the right auricle presented effused lymph, its cavity was enlarged and exhibited an ulcerated surface covered with a matter resembling pus and blood. In the cavities of the pericardium, pleura, and abdomen there was slight effusion; spleen enlarged and containing a scrophulous tumour.

Fig. 3. Exhibits osseous deposit within and along the free margin of the aortic valves, conjoined with wart-like excrescences. A large osseous mass (*a*) partially covered by membrane on its upper and lower aspects, and having an irregular surface, involves the free margin and inner half of one of the valves, which, from the weight of the matter deposited, is dragged downwards in the direction of the ventricle. There are also wart-like excrescences, disposed in a circular manner, extending over about two-thirds of the circumference of the arterial opening, and attached to the endo-cardiac membrane immediately below the valves, as well as around the orifice corresponding to one of the coronary arteries. The parts have been brought into view by means of a perpendicular division of the aorta and arterial orifice of the ventricle, the incision dividing the base of one of the valves, but not extending more than half-way towards its free margin. (*a*) A probe passed through the natural opening into the heart.

The only particulars known relative to this case are, that the patient from whom the preparation was obtained had been hemiplegic for a considerable time before he died. After death the heart was found diseased, and the valves as above described: the kidneys contained many calculous concretions.

Fig. 4. Shows an ulcerated opening (*a*), about three lines in diameter, in one of the sigmoid valves of the aorta. In the preparation the valves are in a patulous state, thickened and rigid, particularly along their free margins, and contain a considerable quantity of ossific matter. The degree of

rigidity is so great, that, by pushing with the finger on the upper surface of the valves, their edges cannot be made to meet in the centre, as during the recoil of blood towards the ventricle in the healthy state; or even to an extent sufficient to alter materially the form or size of the triangular opening, which is shown in the figure.

Case. Malbrooke, æt. 45, a short, well-made black. "During the last three years of his life he suffered from pain in the region of the heart on any bodily exertion, such as pulling an oar, or carrying a heavy load; the attacks of pain were, however, more easily excited during the last year of his life, and were accompanied with severe dyspnœa." On the morning of the 31st of July, 1837, after having kneaded bread for a short time, he was seized with severe pain in the region of the heart and compelled to sit down. In about an hour afterwards he fell down, as if from suffocation, and died almost immediately.

Sectio Cadaveris. Six ounces of clear serum in the pericardium. Right auricle twice its usual size, and distended with liquid blood. Left ventricle very considerably hypertrophied, with the semilunar valves of the aorta as described and shown in the drawing. The inner coat of the aorta contained a few spots of atheromatous deposition, and bore marks of chronic inflammation. Blood contained in the venous system very liquid. About a quart of clear serum in each pleural cavity; lungs healthy.

Fig. 5. Exhibits the semilunar valves of the aorta studded with opaque spots arising from atheromatous deposit. One of the valves presents two ulcerated openings (*b*, *b*), of considerable size. The aorta, from its commencement to within an inch of the termination of its arch, is likewise considerably thickened from a deposition of atheromatous matter, which deposit is particularly evident in the situation of the sinuses (*a*). The openings of the different arteries given off from the aorta are more or less puckered and contracted.

Case. Private J. F., æt. 26, 72nd Highlanders, of scrophulous habit, was admitted into the Regimental Hospital at Cape Town on the 2nd of March 1832, with acute bronchitis, when the existence of a remarkably strong pulsation was discovered in the carotid arteries, to which, according to his own statement, he had been long subject, although he had not otherwise suffered any particular uneasiness. Eleven days after admission he was dismissed, cured of the bronchitis, and he continued healthy until the 27th of July following: on that day, in consequence of having run across the barrack-square, he was seized with violent palpitation of the heart, dyspnœa and cough, which continued until the 31st, when he re-entered the Hospital. The action of the heart for some time continued violent and laborious, and was accompanied by full strong pulsation of the arterial system, dyspnœa, cough, and puriform expectoration. The left side of his face was constantly bathed in perspiration, while the right side always remained dry. On the 20th of August he was attacked with erysipelatous inflammation of the left side of the face, which was strictly bounded by the mesial line of the nose. His health improved soon afterwards, and on the 29th of August he was removed to the country for change of air. On the 4th of January, 1833, he rejoined head-quarters considerably improved; but having on the 7th "rather exerted himself," the cardiac symptoms returned with all their former violence. On the 11th he again entered the Hospital, soon became worse, spent disturbed and sleepless nights, and complained of throbbing pain in the abdomen. In this state he lingered until the 7th of February, when he died. On examination of the body, the heart was found to be hypertrophied, and all its cavities much dilated and filled with dark blood. The valves appeared as delineated, and the aorta presented spots of atheromatous deposit. The right lung was connected to the pericardium, and the left lung to the pleura costalis, by old adhesions; the left also showed evident traces of recent inflammation and cohesion between it and the pericardium. The liver was found enlarged, indurated and mottled, and the mucous membrane of the small intestines highly vascular.

Fig. 6. Exhibits wart-like excrescences (*a*) fringing the whole extent of the margin of the left auriculo-ventricular opening; and a band (*b*), about an inch in breadth, of similar ones extending from the above opening, along the inner surface of the left auricle, for the distance of nearly an inch and a half. In addition to the above appearances, the preparation also shows a similar state of the free margins of the mitral and aortic valves, the former of which is likewise slightly thickened throughout its whole extent. The *chordæ tendineæ*, besides showing several pendulous excrescences, appear generally thickened and whiter than usual, as if from a deposition of lymph under the endo-cardiac membrane. On the surface of the *columnæ carneæ*, particularly at their extremities, the membrane is opaque and thickened, apparently from the same cause.

Case. Private A. T., æt. 27, 72nd Highlanders, by trade a tailor, was admitted to the Regimental Hospital at Cape Town on the 15th of April, 1834. He complained of severe dyspeptic symptoms, particularly after meals, attended by dyspnœa, cough, and pyrexia. The pulse was full, strong and throbbing, and varying in frequency from 100 to 120. The sounds of the heart were dull and its impulse strong, and felt not only in the præcordial region, but over the whole left side of the chest. The dyspeptic symptoms were materially relieved by the use of mild laxatives and tonics; but the dyspnœa and cough increased, and were rendered more urgent by the recumbent posture. The expectoration, which on admission was frothy, now assumed a purulent appearance, and was frequently tinged with blood. Soon after, the thoracic symptoms became greatly aggravated, anasarca of the face and extremities ensued, and he died on the 8th of July, 1834.

Sectio Cadaveris. Coats of the pericardium attenuated and transparent; its sac contained eight ounces of serous fluid. The external surface of the right auricle rough, apparently from effusion of lymph, and on the surface of each of the ventricles there appeared "a white patch of Corvisart." On opening the heart, the various morbid changes of structure already described, and which are represented in the drawing, were found. The right lung adhered intimately and universally to the parietes of the chest; the left pleural sac contained two pints of amber-coloured fluid; both lungs were gorged with dark blood, and œdematous, and easily broken up. The liver adhered extensively to the diaphragm: its capsule was thickened, and its structure granular and friable. The spleen was condensed and enlarged, weighed two pounds and a half, contained several tubercular masses, and adhered to the diaphragm and left lobe of the liver.

Fig. 7. Shows portions of the semilunar valves (*b*) in a fibro-cartilaginous state, and studded with pieces of bony matter; also an aneurism involving one of the sinuses of Valsalva and a portion of the upper part of the left ventricle and semilunar valves. The sinus of Valsalva is considerably dilated, and there exists at the lower part of its external surface a distinctly rounded opening (*a*), the edges of which are thinned and irregular. At the upper and inner part of the tumour, near the common point of attachment of two of the valves, the internal membrane appears to have given way; the blood, by its reflux towards the ventricle during the resistance of the arterial system, seems to have raised the edge of the lacerated membrane, to have passed under the base of one of the valves towards the ventricle, and, at a situation immediately inferior to the valves, to have there caused a tumour, covered by the endo-cardiac membrane. The latter is proved by the fact, that the lining membrane of the ventricle may be seen reflected over the root, and continued along the uninjured portions of the surface of the mass of fibrinous coagula represented in the drawing.

The only particulars known respecting the above preparation are, that it was taken from the body of a soldier of the 80th Regiment, who died of fever, and in whom the existence of cardiac disease during life was never suspected.

Fig. 8. Exhibits the aortic valves (*b*, *b*) more or less thickened, especially along their free margins; at some points they feel like fibro-cartilage. The septum (*c*) between two of the valves is much thickened, and converted into bone, the surface of which is covered by the lining membrane. The preparation shows also thickening of the coats of the aorta at its origin (*a*, *a*), from copious deposition of atheromatous matter.

From J. A., aged 39, Rifle Brigade, a patient who died in the Military Lunatic Asylum, Fort Clarence, from erysipelas of the head. No symptoms were at any time noted, supposed to have any connection with the disease displayed in the preparation.

Plate 4

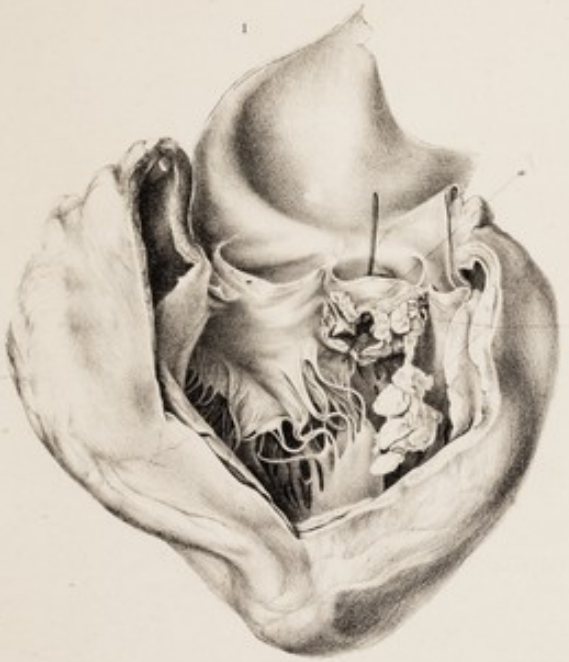


PLATE V.

Represents first, Aneurismal Tumours confined to the Heart; and secondly, Tumours of the same description, involving both the Aorta and the Heart.

Fig. 1. Represents an aneurismal tumour (*b*), about the size of a very large lemon, arising from the left ventricle, and communicating with its cavity (*c*) by a circular opening (*a*), about an inch in diameter. The opening in question presents a smooth somewhat rounded edge, and is situated nearly midway between the base and apex of the ventricle.

Fig. 2. The aneurismal tumour represented in Fig. 1. laid open, to show its internal surface (*a*). The cavity is fully equal in dimensions to that of the left ventricle, with which it is connected; its inner surface appears corrugated, somewhat unequally dilated, and covered by a false membrane of considerable density. The walls of the tumour at its outer side adhere to the adjoining portions of the pericardium and lung. The thinnest portion of the walls of the tumour is that corresponding to a depression seen at its upper, inner, and back part. *b*. A probe passed through the opening between the ventricle (*c*) and aneurismal sac.

Case. Serjeant B. M., 65th Regiment, æt. 39; twenty-one years' service, seventeen of which he passed in India. On his arrival from that country, on the 11th of July, 1820, he was admitted into the General Hospital, Fort Pitt, suffering under the following symptoms:—dyspnœa, severe cough, accompanied by purulent expectoration, inability to lie on either side, extreme irritability of stomach, confined bowels, impaired appetite, and thirst; pulse 110, small and feeble. On inquiry, it was found that he had suffered from an attack of similar symptoms in October 1818, and that during March 1819, he had twice been subject to attacks of copious hæmorrhage from the lungs, from rupture of a blood-vessel.

The origin of these complaints he attributed to exposure to cold and wet, whilst on fatiguing marches in the Deccan. In the daily reports relating to this case, the pulse is almost uniformly recorded as having been "very small and feeble," and the irritability of stomach extreme, giving rise to vomiting, more or less constant, and, in general, to immediate rejection of all ingesta.

Under the circumstances above detailed, debility, conjoined latterly with œdema of the lower limbs, rapidly increased, and he died on the morning of the 29th of July.

Sectio Cadaveris. Effusion into the ventricles and at the base of the brain. Strong adhesions of the lungs to the ribs on both sides, as well as of the lungs to the pericardium: the structure of the lungs tuberculous. No further marks of disease of the heart, beyond those already described and represented in the drawing, can be detected on minute examination of the preparation. For a case, resembling in many points that above detailed, see "Corvisart on the Diseases and Organic Lesions of the Heart and Great Vessels," translated by Mr. C. H. Hebb, Section iii, Case 41, page 241, London Ed. 1813.

Fig. 3. Aneurism at the origin of the aorta (*a*), involving the upper and back part of the septum cordis, and seen in the preparation to project into the right auricle (*b*) so as materially to encroach on the dimensions of that cavity, and slightly on the right auriculo-ventricular opening.

One of the aortic valves is widely separated in the direction of the apex of the heart from the usual attachment of its base, for a depth measuring nearly two inches from the free margin of the valve. The curtain, thus formed between the aneurismal cavity and that of the left ventricle, projects considerably along its whole length into the latter, and presents, about the middle of its perpendicular measurement at one side, an extensive irregular opening (*c*) having its edges fringed with elongated verrucose excrescences (*d*). The coats of the portion of the aorta around the opening into the aneurismal sac, as well as the sinuses of Valsalva, contain a copious deposit of atheromatous matter.

Case. J. M., 98th Regiment, entered the Hospital at the Cape of Good Hope, on the 17th of February 1833, with symptoms at first supposed to be connected with Pneumonia. His countenance was pale and dejected, pulse seventy, and blood drawn from the arm exhibited the buffy coat. Under the influence of antiphlogistic treatment, the pulse, in the course of a short time, fell to forty-eight and intermitted. The breathing continued laborious, and the countenance assumed a highly cadaverous expression; whilst the ears, lips, and face generally were of a dark purplish colour. On the 21st of March the operation of paracentesis was performed, and two pounds of serous fluid removed, but without relief. Afterwards "Dr. Murray tapped the pericardium from below the cartilaginous margin of the false ribs," by which operation forty-two ounces of a bloody, serous fluid were removed, followed by further oozing, with temporary relief. The patient died about an hour after the operation.

On dissection the surface of the heart was found blanched, and its cavities distended with blood. In the pericardium were found four ounces of serous fluid; a pint of bloody serum in the left pleura, and twenty-four ounces of amber-coloured fluid in the right.

Fig. 4. Exhibits an aneurismal dilatation, situated at the apex of the left ventricle of the Heart. The cavity of the aneurism is seen to be occupied by an irregularly-shaped fibrinous coagulum (*a*), about the size of a filbert, which, at its most inferior point, is separated from the cavity of the pericardium by the walls of the sac, which measure only about a line in thickness. Attached to the external surface of the apex of the ventricle in the situation of the aneurism, and extend-

ing for some distance beyond its limits, are seen the remains of adhesions which connected the apex of the heart with the inner surface of the corresponding portion of the pericardium.

The only particulars attainable relative to this preparation are, that it was taken from the body of G. T., aged 40, 1st Veteran Battalion, who had been confined to Hospital for a considerable time previous to his death.

Besides the appearances already described, the lungs were found universally adherent to the walls of the chest.

Figs. 5. and 6. Show an aneurism of about the size of a small orange, situated at the origin of the aorta, and involving the sinus of Valsalva, from which the right coronary artery arises. It projects extensively into the upper part of the right ventricle, so as to occupy the greater part of the diameter of the upper third of that cavity, as well as of the commencement of the pulmonary artery, one of the valves of which is much thinned and extended over the convex surface of the tumour.

In Fig. 5. is seen the aneurismal opening (*a*), the sinuses of Valsalva containing atheromatous deposit, and two of the semilunar valves thickened, around the situation of the *corpora Arantii*, from the same cause. A portion of the semilunar valve, corresponding to the sinus with which the aneurism is connected, projects in a mammillated form downwards and rather backwards, towards the cavity of the left ventricle. The mammillated projection of the valve just mentioned is opaque, and appears somewhat thickened, even from its base, by atheromatous deposition.

In Fig. 6. is seen the aneurismal tumour (*a*) projecting into the upper part of the right ventricle, and presenting at one side, near the upper and anterior part of the septum cordis, a roundish opening (*b*), the edge of which is moderately regular and somewhat polished; the opening measures about one third of an inch at its extreme diameter.

Case. Private G. C., æt. 25, 77th Regiment, of sanguine temperament, robust and well-formed; during a fortnight, previous to his admission into the Regimental Hospital at Malta, he suffered from frequent strong pulsations of the heart, particularly on exertion. The action of the heart, on admission, was strong, concentrated, tolerably regular, and accompanied by a well-marked bellows sound in the præcordial region, while its other sounds were audible over most parts of the chest; pulse ninety-six, strong, regular, moderately full, and easily accelerated. Percussion of the chest normal; no difficulty of respiration experienced when at rest; no cough. He complained of a sense of weight in the epigastrium, as also of a feeling of oppression after meals; tongue furred, appetite bad. From the time of admission the symptoms continued to become more and more marked, yet until two days before death, the patient's sufferings, according to his own statement, were not materially aggravated. The action of the heart was increased, the pulse generally ranged between 120 and 130, and became more jerking. About the end of the third week from admission, he was observed to labour under occasional short cough, accompanied by some degree of dyspnœa, lividity of the lips, œdema of the face and feet, thirst, and dryness of skin. Shortly after this time, ascites and general anasarca ensued; the cough and dyspnœa increased, and the whole countenance became livid, and more perceptibly œdematous.

About eight o'clock on the morning of the 8th of December, eighty days after admission, while getting out of bed he staggered, fell, and almost immediately expired.

Sectio Cadaveris. Besides the appearances already described and delineated, there were found about a pint of serum in the pericardium and a few shreds of recently effused lymph attached to the surfaces of the right auricle and ventricle. The various cavities of the heart fully distended with blood. Lungs highly congested. The abdomen contained ten pints of serum: liver congested, but otherwise healthy.

PLATE VI.

Represents Aneurisms of the Aorta immediately above the Semilunar Valves.

Fig. 1. An aneurismal tumour, about the size of a large plum, connected with the right side of the aorta, immediately above the semilunar valves, and which burst (at *b*) into the pericardium. The opening (*a*) by which the aneurism communicates with the aorta is circular, about an inch in diameter, and its edge rounded, and moderately regular. Within the coats of the aorta, near to the verge of the opening at its back part, there is some trace of atheromatous deposit, and a similar deposition, but to a much greater extent, in the coats of the thoracic portion of that vessel, below the origin of the left subclavian artery. No coagulum was found in the tumour.

Fig. 2. Exhibits a considerable portion of the walls of the right auricle removed to expose the tumour (*a*) shown in the drawing and alluded to in the description of Fig. 1, and which projects into the upper part of the auricle.

The highest point of the tumour surmounts considerably the upper limits of the auricle, and presents a ragged opening (*b*) capable of admitting a goose-quill, through which the blood escaped into the pericardium.

Case. Jean, æt. 33, creole of Mauritius, a stout, muscular man; never, except on one or two occasions, when he suffered from "slight cold," complained of illness until the 5th of September, 1837. On that night, after showing remarkable cheerfulness of manner, and laughing much, he ate some rice and retired to rest. Soon after dyspnœa came on, and he died in a few minutes.

Sectio Cadaveris. Besides the aneurism and state of parts already described, there were found about twenty ounces of coagulum in the pericardium, and old pleural adhesions; the lungs were healthy.

Fig. 3. Exhibits an aneurism (*b*) of the aorta about the size of a walnut, situated immediately above the semilunar valves, and involving the right coronary artery (*c*). The parietes of the sac are thin, particularly at its superior part, and close to the opening (*a*) by which it communicates with the aorta. The arch of the aorta is studded with atheromatous deposit, and at the concavity of the arch, and nearly opposite the origin of the left subclavian artery, there is an ulcerated spot, half an inch in length, with irregular fungous edges.

Taken from the body of J. S., 60th Regiment, who became suddenly affected with dyspnœa, and fell dead on the floor.

On examination, the aneurism above described was found to have burst into the pericardial sac, which was filled with blood.

Fig. 4. Exhibits general dilatation of the coats of the aorta for the extent of two inches and a half from its origin, and an aneurismal tumour (*a*), capable of containing a middle-sized peach, projecting from the posterior part of the dilated portion. The membrane lining the dilated portion of the aorta is opaque and firm. In the posterior part of the enlarged portion of the vessel is an oval opening (*b*), one inch and three quarters in extreme diameter, leading into the aneurismal tumour. The edge of the opening projects, and is smooth, polished and firm, like fibro-cartilage.

At the upper and right part of the tumour is a lacerated opening (*c*) an inch long, to a portion of the circumference of which adheres the upper margin of the right auricle, which is thrown considerably upwards and to the right side; the tumour projects backwards to some extent between the right and left auricles in such a manner, as, in a certain degree, to force their respective walls towards each other. It must also have compressed the descending aorta against the spine, as well as both *bronchi*, immediately below the bifurcation of the trachea. The right branch of the pulmonary artery, situated at the upper and back part of the tumour, must also have suffered some compression.

The only particulars known relative to the case from which the preparation was obtained are, that it was taken from the body of a woman who had been treated for Angina pectoris. The pericardium contained about eight ounces of bloody serum, which being removed, the heart was found completely enveloped in a coagulum.

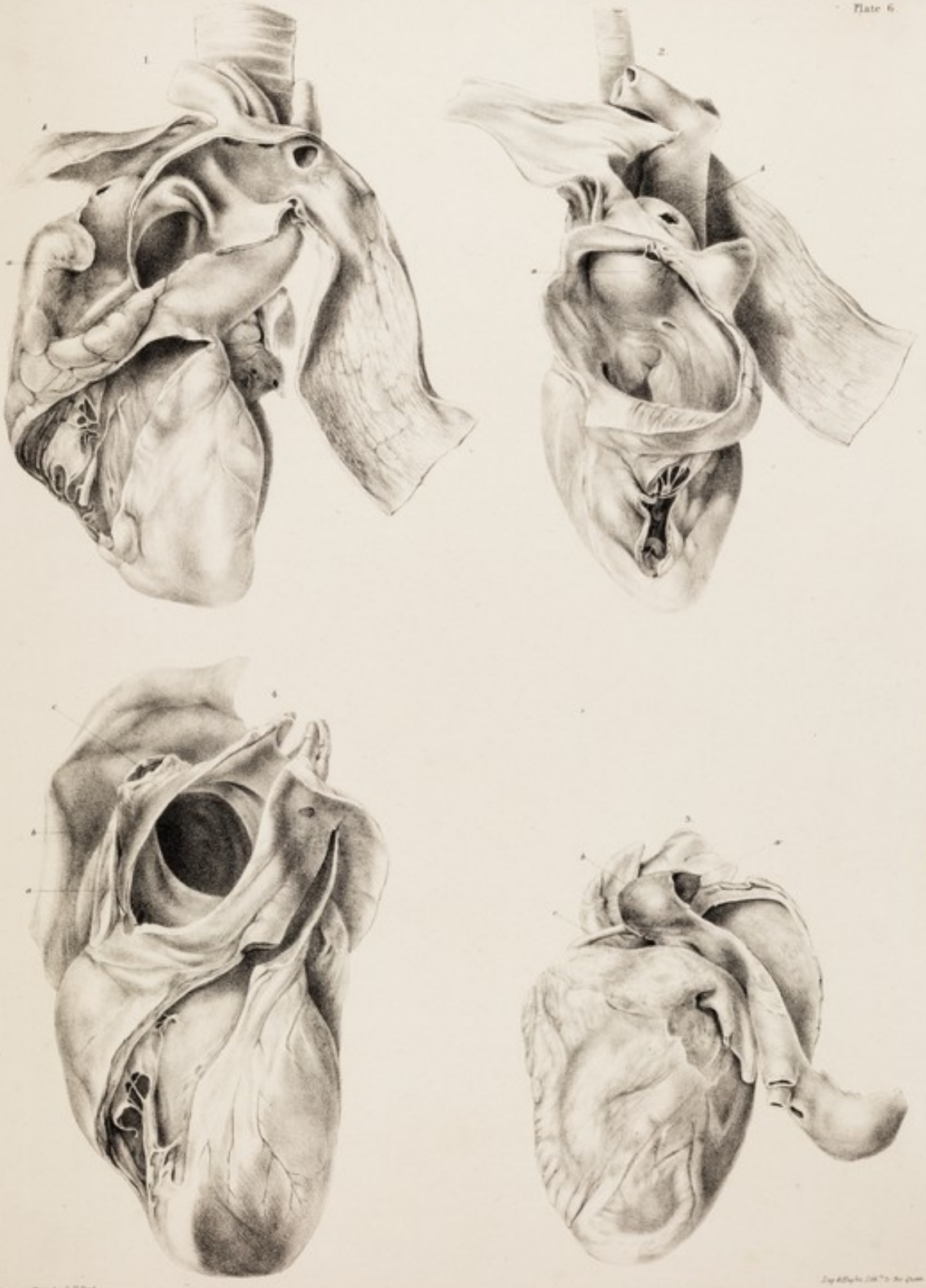


PLATE VII.

Represents Aneurisms, etc. of the Thoracic portion of the Aorta.

Fig. 1. Exhibits a small aneurism of the aorta, about the size of a horsebean, and situated an inch above the semilunar valves. The aorta at its origin is likewise irregularly dilated, and there is atheromatous deposit between its coats: the semilunar valves are coated with warty excrescences (*b*, *b*), and a number of smaller vegetations (*c*) of the same description exist in one of the sinuses of Valsalva. The sac of the aneurismal tumour consists simply of the external coat of the aorta, the two others having been destroyed by ulceration; and the ulcerated opening (*a*), the consequence of the destruction of the two internal coats, is of an irregular form, having inverted and jagged edges. Around the edges, as well as in the sinus of Valsalva immediately below them, are also observed numerous minute ulcerated points.

Fig. 2. An aneurismal tumour, the size of a walnut, situated between the origins of the left carotid and innominata arteries, and communicating with the aorta by an opening (*a*) three-quarters of an inch in diameter, the edges of which are smooth and rounded. The sac is partially filled with organized coagula or fibrine. The transverse portion of the arch of the aorta is closely studded with thin bony plates, which are situated between its middle and internal coats, except where the latter has disappeared, which is the case at many points.

Fig. 3. A second view, showing the exterior of the aneurismal tumour delineated in Fig. 2. The trachea is seen pressed backwards, contracted in calibre, and with two of its cartilaginous rings widely separated from each other. The mucous membrane at the point of separation is very thin, and elevated into a tumour (*a*) the size of a horsebean.

Case. Corporal J. S., Bugler 60th Rifles, æt. 33, was admitted into the General Hospital, Fort Pitt, in July 1837, labouring under cough, constant difficulty of breathing, and slight muco-purulent expectoration. Seven months prior to his admission he was seized with pain in the chest and Hæmoptysis, which he attributed to his occupation in the Regiment. On physical examination of the chest, the auscultatory signs of advanced Phthisis were present to such a degree, as completely prevented any sounds which could be considered as indicating the existence of lesion of the vascular system being heard. He died, much emaciated, nine months after the attack of Hæmoptysis, and during the latter period of his illness the dyspnœa was accompanied with aphonia.

Fig. 4. Exhibits an aneurismal tumour (*a*), situated at the descending portion of the aortic arch, and which has its sac composed of all the coats of the artery. The anterior portion of the left bronchus has been removed, to bring into view the two openings (*b*) consequent upon the rupture of the aneurism into that bronchus. The coats of the aorta are likewise thickened, and contain much atheromatous deposit.

The preparation was taken from the body of a man of the 73rd Regiment, æt. 24, who died suddenly. He had previously enjoyed good health, and the existence of the disease which proved fatal was never suspected.

Fig. 5. Exhibits a large aneurism of the ascending aorta, the opening into which is situated one inch and a half above the semilunar valves, is one inch in diameter, and its edges smooth and hardened by calcareous and atheromatous depositions. The tumour measures, from before backwards, seven and a half inches; projects beyond the thoracic parietes to the height of three inches, having destroyed a portion of the right side of the sternum, and of the second, third, and fourth ribs, to the extent of four inches of their length. The sac is filled with laminated coagula, and occupies a considerable part of the right pleural cavity, to the parietes of which it is closely adherent. *a*, A transverse incision in the sac to show the coagulum.

Case. P. P., æt. 35, a native of Manilla,—a seaman by profession, was admitted, into the Government Civil Hospital at Mauritius, with a strong pulsating tumour of the right breast, and complaining of cough and difficulty of breathing. He attributed the origin of his complaint to a violent blow he had received on the chest, seventeen months previously. Whilst under treatment in hospital he was seized with dysenteric symptoms, of which he died. On dissection, besides the aneurism represented in the figure, the large intestines were found much ulcerated.

Plate 7.

PLATE VIII.

Represents, first, Aneurisms of the Thoracic Aorta; secondly, osseous deposit in the Aorta; and thirdly, dilatation, with atheromatous deposition under the coats of that vessel.

Fig. 1. Exhibits an aneurism (*a*) the size of a walnut, situated two inches above the semilunar valves. The opening (*b*) from the aorta into the sac is in the form of an irregular slit, about four lines in length, the edges of which are rounded and covered by the lining membrane. The parietes of the sac towards its upper part are of considerable thickness, but elsewhere attenuated, and near to their lowermost point there is a small opening, capable of admitting a bougie, the consequence of rupture which was followed by immediate death. The blood was discharged into the pericardium. Half an inch higher in the vessel, and on the concave side of its arch, a second aneurism is seen, about the size of a hazel-nut, round the opening (*c*) into which the internal membrane of the vessel has been fissured in one or two places. The whole of the inner surface of the ascending aorta, moreover, is thickened, corrugated, and closely studded with atheromatous matter.

The preparation was taken from the body of a soldier who died suddenly.

Fig. 2. An aneurismal tumour of the transverse portion of the arch of the aorta, laid open anteriorly to show the perpendicular septum by which it is separated from the artery. The septum (*b*) consists of the two inner coats of the latter, and the sac (*c*) of the aneurism generally of the external coat which, by the blood, had been detached from the outer surface of the middle coat. The opening (*a*) through which the blood reached the aneurismal sac is nearly three-quarters of an inch in diameter, almost circular, and situated in the upper half of the septum. The edges of this opening are rounded and coated with the lining membrane of the aorta, which membrane is also continued for a short distance on the outer surface of the septum. The interior of the aorta is much thickened by atheromatous deposit, particularly opposite the left subclavian artery. The preparation also shows a diseased state of the aorta at the point where it commences to descend in the thorax, and an appearance as if a second aneurism had been about to be formed.

The preparation was taken from the body of a soldier of the 73rd Regiment, who died in consequence of a rupture of the aneurism above described; the blood was effused into the left cavity of the chest.

Fig. 3. Exhibits an aneurism (*a*) the size of a large orange, arising from the transverse portion of the arch of the aorta, and extending upwards two and a half inches above the bifurcation of the trachea, against which it presses (*b*). The coats of the sac are thin, particularly at the summit of the tumour, which is pointed and lies to the left of the trachea. The large brachio-cephalic trunks are seen in front of the tumour. The opening from the aorta into the sac is large, its edges are rounded, and situated posterior to the above-named vessels.

Case. J. H., 55th Regiment, æt. 36, was admitted into the General Hospital, Fort Pitt, on his arrival from India, where he had served eight years. After he had enjoyed good health for six years in that country, he was attacked with violent action of the heart, urgent dyspnœa, cough, with muco-purulent expectoration, and subsequently aphonia. In the case that accompanied this man from his Regiment, internal aneurism was diagnosed. When he was admitted into this hospital, the slightest exertion produced violent palpitations of the heart, the sounds of which were indistinctly heard over the whole anterior part of the left side, but not posteriorly; and they were so masked by sonorous, sibilous, and cooing râles, that it was quite impossible to discover if any bruit existed. From this period the dyspnœa became very urgent, and a livid condition of the lips and an anxious expression of countenance were observed to be present, also some œdema of the lower extremities. His cough increased in severity, and the expectoration became more copious; the stethoscopic signs above described were more intense, and accompanied by slight dullness over the superior and anterior part of the chest. He could not lie on his right side, nor had he been able to do so, with any ease to himself, for the previous eighteen months. His pulse was small and irregular, varying from eighty-six to ninety-four. Under these symptoms he died, sixteen days after his admission into the General Hospital.

Sectio Cadaveris. Slight opacity of arachnoid membrane. Pineal gland small and pultaceous. A considerable portion of superior lobe of right lung hepatized; portions of the middle and inferior lobes emphysematous; bronchi red: apex of superior lobe of left lung indurated, probably the result of old hepatization; a small bony concretion in the middle lobe; hepatization toward margin of inferior lobe, and adhesions to the diaphragm; bronchi red and smaller than natural; bronchial glands large at bifurcation of trachea. The aneurism represented in the Plate was discovered. The pericardium contained an ounce and a half of yellow fluid. The heart was enlarged, the semilunar valves slightly diseased, and the coats of the aneurismal sac were found to be thinner than those of the aorta.

Fig. 4. Exhibits an aneurismal tumour (*a*) of the thoracic aorta, about the size of an orange, immediately below the termination of its arch, and which had produced superficial absorption of the bodies of two of the dorsal vertebræ. The opening from the aorta into the aneurism is large and

nearly circular; its edges rounded and covered by the lining membrane of the vessel, which membrane is also visible for some distance on the inner surface of the sac. The parietes of the sac posteriorly are thin, and show a large, irregular, and lacerated opening (*b*), through which blood, to the amount of eight pints, had escaped into the left cavity of the chest; the lung of this side was greatly compressed: the coats of the aorta are loaded with atheromatous deposit.

Case. P. M., 72nd Regiment, æt. 41, twenty-two years in the service, fifteen of which he passed at the Cape of Good Hope, where he suffered from what he termed rheumatic affections, viz. pains in the shoulders, back, and loins. When admitted into the General Hospital, Fort Pitt, his countenance was pale and expressive of anxiety, and he complained of pain and sense of oppression in the left side. The left side of his chest seemed fuller than the other, sounded dull on percussion, and the respiratory murmur was entirely inaudible. Two hours after admission, he was seen in a state of faintness, approaching to collapse; the pulse was fluttering, and the body covered with perspiration. He died nine hours after entering the hospital. On examination after death the lesion represented in the figure was discovered, but no other morbid appearances of any consequence.

Fig. 5. Exhibits an aneurismal tumour at the posterior portion of the aorta immediately below its arch, and capable of containing a pigeon's egg. The tumour had caused absorption of the lower and anterior surface of the fourth, the whole anterior surface, to the depth of a quarter of an inch, of the fifth, and in a less degree of the upper part of the body of the sixth, dorsal vertebræ. These bones formed the posterior boundary of the aneurism, and were covered by laminated coagula only; the sac is closely adherent to the sides of those vertebræ, and thus effusion of blood into the posterior mediastinum was prevented. A free communication existed between the aneurism and the vessel, and the coats of the latter are much thickened from a deposition of atheromatous matter.

Case. Private R. M., 92nd Regiment, æt. 28, a man of usually temperate habits, ten years in the service, four of which had been passed in the Mediterranean, where he suffered from an affection of the chest, from simple continued fever, acute catarrh and dyspnœa, especially on ascending stairs or after any moderate exertion. Of late, the attacks of pain in the chest and dyspnœa had been more frequent and severe. On his arrival at this station his general health was tolerably good, in consequence of which he was permitted to reside in barracks. On the morning of the day on which his death took place he was in his usual state of health, and had been drinking, but to what extent was not exactly known. At 2 o'clock, P.M., he was found at the top of the stairs leading to the barracks, lying in an insensible state, with his mouth and nostrils immersed in a muddy pool. On being discovered he was conveyed to the hospital without delay, and according to the statement of the persons who carried him, he respired deeply once or twice while on the way. When seen by a medical officer no signs of life were discovered, and as aneurism had been diagnosed, it was thought that death had been the result of rupture of the aneurismal tumour.

Sectio Cadaveris. Body muscular; considerable venous congestion on the posterior parts of the trunk and extremities, also some lividity of lips and countenance; a contused wound on right side of lower jaw two inches in extent. Seven ounces of dark liquid blood flowed from the longitudinal sinus; the vessels of pia mater were turgid; substance of fornix, corpora quadrigemina, optic thalami, and walls of fourth ventricle, soft. Lungs engorged posteriorly; bronchial mucous membrane red; heart natural; the thoracic aorta was much thickened by atheromatous deposit, more especially where the large vessels are given off, and the aneurism delineated was discovered. Liver gorged with blood; the other viscera healthy.

Fig. 6. Shows an aneurism (*a*) of the descending aorta, near the termination of its arch. The tumour, which is of an irregular figure and nearly four inches in length, has insinuated itself under the œsophagus, which in the Plate is to be seen forming a curvature (*b*) in front of the aneurismal swelling. Towards the inferior part of the tumour there is a ruptured opening, capable of admitting a goose-quill, through which the blood escaped into the base of the left lung. The surfaces of two of the vertebræ opposed to the aneurism are bare and carious.

The preparation was taken from the body of a black, who, for some time before death, complained of a dull pain between the scapulæ, and had inordinate action of the heart and arteries, with orthopnœa. He was found dead on the sea-shore, after he had bathed. On dissection the left lung was found collapsed, and was separated from the mediastinum by a firm coagulum, three inches in thickness, extending from the clavicle to the diaphragm; the clot and fluid taken together measured five pints. The posterior part of the lung was soft, the pleura having apparently been long detached.

Fig. 7. A portion of the abdominal aorta, exhibiting patches of osseous deposit on its inner surface; the lining membrane of the vessel is ulcerated immediately around these deposits, leaving the bony laminæ (*a*, *a*, *a*) bare. In the spaces between the osseous plates the coats of the artery are studded with incipient atheromatous deposit.

Fig. 8. A portion of the descending aorta, exhibiting fusiform dilatation and atheromatous deposit beneath its inner coat. The vessel immediately above and below this part is free from disease.

Taken from the same subject as the preparation figured and numbered 2.

Plate 8.

PLATE IX.

Represents, first, Aneurisms of the Thoracic and Abdominal Aorta; and secondly, the laminated structure of Aneurismal Coagula.

Fig. 1. The aorta laid open, to expose the orifice of the aneurismal tumour, represented in Fig. 2. as situated at the transverse part of the arch, and immediately behind the great vessels that arise from it. The opening (*a*) is circular, and measures half an inch in diameter; its edges are rounded, and covered by the lining membrane of the vessel, which spreads out for some distance on the interior of the sac. The tumour is the size of a pigeon's egg, and is firmly attached to the trachea behind. A considerable dilatation (*c*) may be seen in the figure at the great sinus of the arch (*b*), and two smaller ones (*c*, *d*) in the sinuses immediately above the valves; one of which (viz. that from which the right coronary artery arises) is capable of containing a hazel-nut; the coats of the vessel in these situations are much infiltrated with atheroma.

Fig. 2. Exhibits the exterior of an aneurismal tumour (*a*) arising from the transverse part of the arch of the aorta, closely connected to the trachea behind, and bounded by the brachio-cephalic trunks in front, one of which (the innominata artery) makes a deep indentation in the sac. Three other dilatations (*b*, *c*, *d*) are also seen in the figure; one in the sinus of Morgagni, and the other two situated, one in each of the lesser sinuses, immediately above the valves.

Case. O. B., twelve and a half years in the service, was admitted into the General Hospital Fort Pitt, with cough, dyspnœa increased by exertion, and palpitations of the heart. Pulse weak, irregular, and varying from 105 to 120, but seldom under 120. He stated that he had been subject to the palpitations for eighteen months. Nine days prior to his admission into the General Hospital he contracted a fresh cold, which produced aggravation of his cough and pain in the chest. On examination the chest was found to be dull on percussion in both subclavicular regions, but particularly in the left which was much flattened; and loud sonorous râles were audible in these regions, while the mucous râle was heard generally over the chest. The dyspnœa gradually became more aggravated, almost amounting to suffocation; the head, neck and body were covered with perspiration; the pulse was feeble, and the mind quite wandering. He expired on the twenty-second day from his admission.

Sectio Cadaveris. A small quantity of fluid was found under the arachnoid membrane; the fornix and pineal gland were soft; small vesicles were seen in the inferior cornua of both lateral ventricles; the optic thalami were redder than natural.

The right lung weighed three pounds and was full of tubercles; the right bronchus and its ramifications contained a great quantity of thick yellow matter: no tubercles in left lung, but its bronchial ramifications were filled with a similar fluid to that found in the right; hypertrophy of left ventricle, and the aneurism represented.

Fig. 3. Exhibits aneurism of the abdominal aorta, with ulceration of the bodies of the lumbar vertebræ (*b*, *b*); and affords a well-marked specimen of dilatation of the external coat of the artery, after destruction of the inner and middle tunics. The basis only of the sac, which was of prodigious magnitude, is shown. Notwithstanding the extensive ulceration of the vertebræ, the interposed fibro-cartilages are intact. (*a*) The opening into the sac.

Fig. 4. Shows an aneurism (*a*), the size of a small melon, arising from the abdominal aorta and involving the cœliac axis; the sides of the sac are thickened by fibrinous deposit on its inner surface, but much attenuated on the fore-part, where it burst. The opening of communication with the vessel (*b*) is oblong; its edges are rounded and smooth, and there is much atheromatous deposit around and below it, so as to contract considerably the orifices of the mesenteric and renal arteries. The fore-part of the aorta is dilated into a pouch (*c*) at and around the orifices of these arteries; below this dilatation the vessel is much contracted. Death took place suddenly, from extravasation of blood into the abdomen.

Fig. 5. Exhibits an aneurism of the thoracic aorta: the vessel is slit open throughout its whole extent, to bring into view a large and nearly circular opening (*a*) of communication with the sac; measuring one inch and a half in its perpendicular, and one inch in its transverse diameters, the edges of which are smooth, callous and rounded. The parietes of the sac are closely attached to the sides of the bodies of the third, fourth, fifth, sixth, and seventh dorsal vertebræ, and also to the heads of the corresponding ribs, which are seen (through an incision (*b*) made in the back part of the aorta) to be denuded and rough from absorption; these form the posterior boundary of the tumour (*c*,*c*). The lung (*d*) is seen intimately adhering to the front and side of the sac on right side of chest, and immediately behind the adhesions there is a large lacerated opening in the sac, through which the blood was effused into the lower lobe of the lung. The coats of the

artery are much thickened by atheroma, and at the junction of the transverse and descending parts of the arch there is an incipient aneurismal dilatation.

Case. R. B., æt. 25, stout and muscular, by trade a tailor, an habitual drunkard, was admitted into Regimental Hospital, complaining of severe pain in the cardiac region and also between the scapulæ. The heart's action was frequent, irregular, and violent, and could be felt to a considerable extent over the chest; its pulsations were not synchronous with the radial artery; decubitus was constantly on the back, in which position he felt most comfortable. Five weeks after his admission into Hospital at Mafra, whilst being removed in a spring-wagon to the General Hospital, Belem, and when distant from the former place two miles, he experienced an increase of pain in the cardiac region and between the scapulæ, and expectorated a small quantity of blood. The heart's action became more accelerated; the pulse more feeble and its irregularity increased; and the extremities cold. A little tea was given him, after which he felt better and proceeded on his journey, but soon afterwards the symptoms again increased, and he exclaimed that he was dying. Immediately a pound and a half of florid blood gushed from his mouth and nostrils, and he instantly expired.

Sectio Cadaveris. Structure of brain healthy; half an ounce of limpid serum in ventricles; the veins were filled with dark blood. The lungs adhered to the costal pleura; the substance of left lung healthy; the superior and middle lobes of right lung presented a mottled appearance on the surfaces of different sections, as if from small patches of effused blood. The inferior lobe was of a dark purple colour, closely connected to the pericardium, and covered the sac of a large aneurism, to which it was closely connected: a large rupture having occurred in this portion of the lung, gave it the appearance of a clot of blood. Each pleural sac contained half a pint of red-coloured serum; and in the left, closely attached to the upper surface of the diaphragm, there was found a conical cyst, the serous covering of which was highly vascular; and out of this cyst, when punctured, rather more than an ounce of tenacious and muddy-coloured fluid flowed, which quickly sunk in water. The pericardium contained ℥ii of yellow serum. The structure of heart soft; the right ventricle was atrophoid, and the cavities of the heart contained but little blood; the aortic valves thickened. The stomach was nearly filled with a dark-coloured fluid, containing some coagula, probably blood that had regurgitated at the time of death; there was no communication between the œsophagus and aneurism. Liver and spleen enlarged; the other abdominal viscera healthy.

Fig. 6. Exhibits a posterior view of an aneurism (*b*) arising from the superior part of the left subclavian artery (*a*); close to its origin the vertebral artery (*c*) is involved in the tumour, and is seen on its upper part; the continuation of the subclavian artery (*d*) is represented at the lower and inner part of the sac.

Fig. 7. Section of a fibrinous coagulum, exhibiting a laminated structure. (*a*) The laminated structure. (*d*) A cavity which contained fluid blood.

PLATE X.

Represents, first, Ruptures of the Aorta; and secondly, Coagula obstructing the circulation in the Iliac vein.

Fig. 1. Exhibits rupture of the aorta, immediately above one of the semilunar valves, in consequence of fungiform disease of its structure. Around the rupture (*a*) the coats of the vessel are thickened from a morbid deposit which forms the mass represented in the figure.

Fig. 2. An external view of the rupture (*a*) represented in Fig. 1; it measures five lines in length. The cellular coat of the artery is raised, and forms an elevated ring around the orifice.

Fig. 3. The aorta at its origin, laid open to exhibit a rupture (*a*), three lines in length, parallel to the course of the vessel. The internal and middle coats appear as if divided by a sharp instrument, and a small thin coagulum, resembling a *lumbricus*, is seen passing through the opening; the interior of the vessel is slightly affected with incipient atheroma.

Fig. 4. An external view of the rupture (*a*) represented in Fig. 3. The external coat is separated from the middle coat for a short distance around the opening.

The preparation was taken from the body of a maniac, who received a severe fall on a pavement in consequence of his foot having slipped on some ice. He died in about two minutes.

On examination the lesion represented in the figure was discovered, and the pericardium was found filled with blood.

Fig. 5. Exhibits two ruptures of the aorta, one of which (*a*) is situated immediately above the valves. The internal and middle coats of the artery are seen lacerated nearly throughout the whole circumference of the vessel, a very narrow slip only of the middle coat (*b*) connecting them at the posterior part. The external or cellular coat is also extensively lacerated, and separated from the others. Close to the left subclavian artery a second laceration (*c*) of all the coats of the aorta has taken place, involving one half of the circumference of the vessel. At the concavity of the arch, nearly opposite to the origin of the large vessels, there are a few spots of atheroma.

The preparation was taken from the body of a man of the 45th Regiment, aged 45, who was found dead in a chalk-pit, into which he was supposed to have fallen when intoxicated. In addition to the injuries represented in the figure, numerous small vessels ramifying on the pleura were ruptured, and the right os femoris was fractured at its neck.

Fig. 6. Exhibits the arch of the aorta, laid open to expose a rupture (*a*) of its middle and internal coats, which runs transversely and occupies more than half the circumference of the vessel. The margins of the lesion are smooth and inverted, as if cut by a pair of scissors. The external coat of the vessel is sound, and is separated for some distance from the middle coat by a stratum of coagulated blood. The pericardium was filled with blood, but the opening through which it escaped was not detected. The preparation furnishes a good illustration of dissecting aneurism.

Case. R. D., 79th Regiment, a tailor, æt. 47, a man of dissipated habits, suddenly became faint on his way from chapel to the barracks, and with much difficulty reached his own room. When seen, he was suffering acutely from pain along the upper part of the chest, particularly severe under the left clavicle. He compared the pain to what he supposed would be produced if a red-hot iron were thrust into his heart; his countenance was pale and anxious, and his respiration greatly oppressed, interrupted, and difficult. No pulsation in the cardiac region could be discovered. An anodyne and antispasmodic draught afforded him immediate relief. After a second draught he passed a quiet night, and on the following day he felt so well as to be able to resume his employment. Two days afterwards he again became ill, and when seen was found labouring under most distressing symptoms, resembling, on first appearance, a fit of apoplexy. He was in a state of insensibility; his breathing was laborious and hurried; his face of a deep blue colour; eyes fixed and pupils dilated to their utmost; the tongue was bluish and projecting beyond the teeth; the pulse was quite imperceptible, and the impulse of the heart could not be felt.

On dissection the pericardium was found distended with blood, and the aorta, from its origin to the turn of the arch, was found of nearly twice its natural circumference, but the coats of the vessel appeared of normal thickness. The rupture immediately above the valves, and the dissecting aneurism, as represented in the figure, were found.

Fig. 7. Exhibits the external iliac vein and artery, with the former obliterated by a substance (*a*) resembling lymph.

Taken from a woman who died of Phlegmasia dolens.

Drawn on Stone by G.E. Ford.

Day & Haghe Lith.rs to the Queen.