A Medical Approach to the Ancient Penalties

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Introduction

I have for some time been interested as to the nature of reported penalties associated with violations of obligations as to their particular origin and possible relationship to known anatomy/anatomical pathology knowledge. Please note I refer only to those penalties which have been reported in open literature. The sources used are clearly defined in the paper and the Annexes.

While much of what I have to address relates to the three degrees of Freemasonry – there are other Orders and degrees of which some information is in the public domain and they too will be addressed, in part, as they relate to the theme of this paper.

Essential hypothesis

The essential hypothesis is that there was applied, in the progressive development of the ancient penalties, some knowledge which had its basis in medicine and those parts of medicine related to anatomy and/or anatomical pathology.

The paper addresses aspects of anatomy, anatomical pathology (post mortem) and possible relationship to ancient penalties.

Let us them look at some of the history of anatomy

Egyptian knowledge of anatomy certainly originated from butchery of animals. Anatomical terms applied to humans and animals; a situation which clearly would lead to problems. The ancient Egyptians established lists to enumerate separate anatomical structures. There were vast numbers eg 25 lists enumerate more than 100 separate structures and are associated with an even larger number of deities.[1]

Writing about the Edwin Smith Papyrus (found at the same time as the Ebers papyrus) John A Wilson notes the papyrus was related to surgeons and their approach, specifically, to bone and skull fractures. In it the surgeon describes whether he can deal with the fracture successfully.

There is also a statements that the “heart ‘speaks’ for various parts of the body”. “The tongue gave bulk to the process of uttering a command”. The heart causes every completed (concept) to come forth and it is the tongue which announces what the heart thinks”[2]

The Ebers papyrus was written approximately 1500 years BC, but there is some question that it was copied from a series of books many centuries older. One passage in the papyrus states “it dates from ~ 3400 BC”. The value of that statement is doubted as it was in Egypt, as it

[1] Studies in Ancient Egyptian Anatomical Terminology James H Walker Ans and Phillip Ltd 1996 pp 262, 283
[2] A study in the Beginnings of Medicine with Special Reference to Ancient Egypt. Warren R Dawson. Methuen and Co Ltd London 1929

was elsewhere, a common literary artifice to ascribe to books a very ancient origin to enhance their value and authority[3].

We see in the papyri (and there are many) the beginnings of medical science, including anatomy and anatomical pathology at least 1500 years BC, and possibly well before that time.

Mummification had a significant impact on the growth of science (and anatomy).

In the course of mummification the brain was removed via the (left) nostril piecemeal. Most internal organs (except the heart) were removed though a lateral incision in the left flank. The abdominal organs were removed though this flank incision by cutting internally. The thoracic organs (except the heart) were removed following an incision in the diaphragm (from below). The heart was left attached to its great vessels. The heart was the seat of intelligence and all emotions (they attached no importance to the brain) and consequently it was not removed[4] (this does not explain the pictures of the heart being weighed against a feather).

All of these mummification actions allowed a familiarisation with organs/viscera in humans and the ability to compare to animals – the latter from sacrifice and food sources[5].

This is an amazing situation when one thinks of the knowledge at the time and how to access various anatomical areas. Just think how difficult it must have been to fathom access to the brain via the nose (an approach, surgically, which is still used today), even if animal models were used (allowing for differences). Further, the ability to access intrathoracic organs from the abdomen is quite brilliant and may reflect applied anatomy from animal models.

The anceint Egyptians certianly had all of the foundations for anatomy of the human and knew of the anatomy of animals. This foundation does not appear to have been readily trasferred as there is essentially a gap in historical writings until we move to Hippocrates.

Hippocrates (*ca*. 460 BC – *ca.* 370 BC)

"From the works of Hippocrates, the father of medicine who flourished about 400 years before the birth of Christ is to be collected all the information of antiquity on the subject of anatomy" [6]. This physician was well aware of the importance of knowledge of anatomy in the 'perfection of the healing art'. Hence his works abound with anatomical 'facts' and observations interspersed with prevailing doctrines of the day.

At that time the description of some parts of the body could only have been determined by dissection. The body was considered to consist of solids, fluids and spirits. The elementary humours Hippocrates divided into blood, phlegm, choler or bile and melancholy or occult bile. This concept was in agreement with the philosophy of the age in which he lived as likewise all the notions of all bodies being composed of earth, air, fire and water. The fine differentiation between like structures (nerves, arteries and veins) was not made. The heart was known as a powerful muscle and he knew some of the major vessels. The circulation of the blood was not known at the time and therefore the arteries carried the spirits. Importantly the soul was seated in

[3] Magician and Leech. Warren R Dawson. Methuen & Co Ltd London 1929 p 75
[4] A study in the Beginnings of Medicine with Special Reference to Ancient Egypt. Warren R Dawson. Methuen and Co Ltd London 1929 pp 36,37,38
[5] A study in the Beginnings of Medicine with Special Reference to Ancient Egypt. Warren R Dawson. Methuen and Co Ltd London 1929 pp 89-90
[6] A Compendium of the Anatomy of the Human body, Andrew Fyfe Benjamin C Buzby Philadelphia 1810 p3

the left ventricle and this statement is ”a memorable example of human vanity, and of the inherent inclination in man, boldly to account for what is inexplicable”[7]

After Hippocrates

After Hippocrates anatomy continued to be improved. As opportunities were extremely limited, from the stated prejudices of mankind its progress was slow and chiefly confined to two schools; Athens and Alexandria. However, because of the restrictions in studying anatomy natural knowledge at Athens was sunk for ever.[8]

But while it decayed in Greece and Asia it rose with increased energy under the protection of Ptolomies at Alexandria. In this school Herophilos, sometimes Latinized Herophilus (335-280 BC), a Greek physician, together with Erasistratus were distinguished for anatomical knowledge. They were afforded and enjoyed ample opportunities to dissect human bodies and corrected many previous errors. Herophilos is regarded as a founder of the great medical school of Alexandria.

He studied the brain, recognizing it as the center of the nervous system and the site of intelligence. He also paid particular attention to the nervous system, distinguishing nerves from blood vessels and the motor from the sensory nerves. Other areas of his anatomical study include the eye, liver, pancreas, and the alimentary tract, as well as the salivary glands and genitalia. His works were lost but were much quoted by Galen in the 2nd century AD. Celsus in 'De Medicina' and the church leader Tertullian stated that he vivisected at least 600 live prisoners (although it should be noted that Tertullian lived several centuries after Herophilos and may have had reasons to discredit what he saw as heresy).

Next to Galen (AD 129 –ca. 200 or 216)

Galen was born in Pergamum, Mysia (now Bergama, Turkey). The son of the wealthy architect Nicon, he had eclectic interests—agriculture, architecture, astronomy, astrology, philosophy —before finally concentrating on medicine.

By the age of twenty, he had served for four years in the local temple as a *therapeutes* ("attendant" or "associate") of the god Asclepius. Although Galen liked to study the human body, dissection of human corpses was against Roman law, so instead he used pigs, apes, and other animals. The legal limitations forced on him led to quite a number of mistaken ideas about the body. After his father's death in 148 or 149, he left Pergamum to study in Smyrna, Corinth, and Alexandria for the next twelve years. In 157 Galen returned to his native city, where he worked for three or four years as a physician in a gladiator school. During this time he gained much experience with treating trauma and especially wounds, which he later called "windows into the body".

Between the times of Herophilus and Erisistratus there was 500 years to the time of Galen. He amassed all of the prior anatomical science that Herophilus and Erisistratus had obtained from dissection of human subjects and incorporated it into his voluminous treatises. It is said that the medical principles of this great man reigned triumphantly in the schools and Universities, disdaining or crushing all innovators or improvers for a period of nearly fifteen

[7] A Compendium of the Anatomy of the Human body, Andrew Fyfe Benjamin C Buzby Philadelphia 1810 p3
[8] A Compendium of the Anatomy of the Human body, Andrew Fyfe Benjamin C Buzby Philadelphia 1810 p 5

hundred years[9]. In a review of writings on Galen, Charles Singer[10] had difficulty in some aspects of translation for three resons, namely; the lack of technical vocabulary; false physiological concepts and ascription to man of anatomical features of animals. Between Galen's death and 1538 there was no dissection in the Greek speaking east.

However, others such as those at The Universtity of Bologna certianly conducted 'dissections'. It is stated that the first reference to a post mortem was conducted, in that University, in 1286 where the post mortem was limited to glancing only at the heart. The first formal acocunt occurred in 1302 and was ordered by the Court in a case of suspected poisoning.[11]

In the period 1300 to 1325 Mondino was considerd the great restorer of anatomy and during that time he dissected a human body in public. However, his descriptions were often elementary and innacurate.

Leonardo Da Vinci (1452 – 1519) undoubtedly used the scalpel and dissection principally, it is said, to improve his art work.

Andreas Vesalius (1514 – 1564)

From the time of Galen to the 15th Century, anatomy was in decline and it was not essentially until Vesalius, that anatomy was for the first time studied in detail and with precision. Initially he clandestinely procured bodies for dissection. He also dissected a great number of animals but it was his dissection of humans that lead to his veneration for Galen diminishing in proportion as he detected Galen's inaccuracies. Such were his finding that he finally threw off all control of the Galen 'standard' of ancient medicine and anatomy and became an advocate for actual dissection of the human body, to which he constantly referred in all of his disputations. He became professor of anatomy in the University of Padua by the Republic of Venice and there gave lectures on medicine and particularly anatomy for seven years.

In 1539 Vesalius published his anatomical plates. In this and all the other works the errors of Galen were exposed.

Not surprisingly a multitude of enemies sprung up against this bold innovator. All Europe resounded with invectives against him. Learned names in Rome, Marburg and Paris became his public enemies employing every "species of calumny" to lessen him in the esteem of his patrons. Notwithstanding all opposition, the reputation of Vesalius increased and he established anatomy on solid and permanent principles.[12]

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[9] A Compendium of the Anatomy of the Human body. Andrew Fyfe Benjamin C Buzby Philadelphia 1810 p 5

[10] Galen on Anatomical Procedures. Charles Singer. Wellcome Historical Medical Museum Oxford University Press 1956 p xv111

[11] Evolution of Anatomy Charles Singer. Kegal Paul, Trench, Trubner & Co Ltd London 1925 p 72.

[12] A compendium of the Anatomy of the Human Body. Andrew Fyfe, Benjamin C Buzby Philadelphia 1810 pp 6,7,8

William Harvey (1 April 1578 – 3 June 1657)

William Harvey at the beginning of the 17th Century discovered the circulation of the blood. This has been the most important discovery ever made in anatomy and upon it depends the whole of our present physiology[13].

Anatomical Pathology

Against a background in which anatomy was then widely held and known, the full emergence of anatomical pathology soon followed. "The advances which Anatomy has made this laft Century, and the judicious Manner in which it has been applied to explain the nature and Laws if the Animal Oeconomy, have been productive, upon many Occasions, of the moft desirable Confequences. The very learned Lord Verulam long ago urged the Neceffity of extending the Ufe of Anatomy beyond fimple Inveftigaiton of the Structure of the Human Body: It appeared to him a Matter of Confequence. That the Variety of Appearances in different Bodies fhould be particularly taken into Notice of, and the Alteration and Effects produced by Difeases be remarked with care and Diligence. Succeeding ages approved his Maxims, and Examination of morbid Bodies, as appearing moft conducive to this purpofe, has been purfued with the greateft induftry and sucefs". [14]

Methods of anatomical dissection, post mortem

The early methods of dissection presumably arose from Egyptian mummification processes with the dissection of extremities following on from work arising from wounds and injuries ('windows into the body', as described by Galen. To examine bones, in particular, bodies or more correctly parts of bodies were boiled to remove tissue and leave the underlying structures. We know from early writings that the specific bones of the skull were, rather than as crudely stated by Galen "I would not that the skull be violently and repeatedly hit for such blows shake the soft brain shattering and disintegraitng it", separated after boiling processes by filling the empty skull (and sealing it) with (dried) peas and soaking it, thus allowing the bones to separate following the expansion of the dried peas.

We know that Pope Boniface the V111 issued, in 1300, a famous Papal Bull excommunicating those who followed the practice of boiling bodies[15]. In 1345 Guido de Vigevano explains (in his actual process of dissection) that the Church prohibits dissection[16].

However, these approaches (and restrictions) were, over time, in a somewhat accelerated manner, changed with the advent of Vesalius. It is these changes which I suggest have some bearing on the issue of ancient penalties. The timing is important as will be the possible involvement of 'medical freemasons'.

With respect to dissection, we see the advent of more formal dissection and furthermore the publication of manuals on dissection techniques. Much teaching up until the time of publication would have followed the early 'classical medical approach' being that of demonstration, which was first seen in Padua. Public dissection by a barber surgeon had been

[13] A Compendium of the Anatomy of the Human body. Andrew Fyfe, Benjamin C Buzby Philadelphia 1810 p 10

[14] Pathological Inquiries and Obfervations (sic) in Surgery, from the dissections of morbid bodies with an appendix containing Twelve cases on different subjects by Richard Browne Cheston, Surgeon in the Glocester Infirmary. Printed by R Raikes 1766. Introduction.

[15] Evolution of Anatomy. Charles Singer. Kegal Paul, Trench, Trubner & Co Ltd London 1925 p 85

[16] Evolution of Anatomy. Charles Singer. Kegal Paul, Trench, Trubner & Co Ltd London 1925 p 86

carried out during the Middle Ages on a body of a convicted criminal who had been sentenced to death while another pointed to points of interest with a stick. Such criminal executions and dissections often took place at carnivals while an audience watched the proceedings[17].

Processes of dissection post mortem

The actual processes for dissection, as they relate to this paper, are best illustrated in The London Dissector[18]. In this publication we see the following:

In relation to the dissection of the abdomen; "An incision should be made through the integuments, from the sternum to the os pubis; and this should be crossed by another passing immediately below the umbilicus: dissect off the flaps. This will lay bare …". Here is certainly a good description of a cruciate incision (as was used by Vesalius from the drawings we see from his time). This process of 'exposure' of the abdominal contents allows good access to all of the bowels and organs within the abdominal cavity. As will be mentioned, this approach, that is a transverse incision or cutting across the abdomen allowed removal of all of the abdominal contents in the 'en masse technique' of post mortem.

The chest was commonly opened by an incision which could go as high as just below each, or both ears, and thence into the midline at the top of the sternum and straight down to the Xiphisternum. The skin on each side of this incision is dissected away to allow a segment comprising ribs, costal cartilages and sternum to be removed (after cutting through ribs) exposing the thoracic contents (specifically the heart and lungs). Such incisions of the chest (going into the neck) allow dissection well into the neck and access to the pharynx, larynx and the 'root' of the tongue.

In respect to the contents of the cranium; "A transverse incision, extending from ear to ear over the crown of the head, the two flaps may with facility be inverted on the face and neck. Remove the superior part of the cranium by saw directed anteriorly through the frontal bone above the orbitar process and posteriorly as low as the transverse ridge of the occipital bone. Thus the subsequent demonstration of the brain will be conducted with greater facility. When the superior part of the cranium, commonly called the Calvarium, or skull-cap, is torn off, which requires considerable force, you expose the dura mater, ….".

There are four fundamental post mortem techniques. They are detailed in Appendix A.

Against this background let us now address the published penalties.

In this commentary I am not saying that Freemasons invented every aspect of the penalties as published. Indeed some may have been borrowed from others sources or modified to suit the ritual of the day. What does seem relevant is the relationship between the then knowledge of anatomy/anatomical pathology of the period and the penalties, and the actual penalties or changes seen in them. Furthermore, the plausibility of undertaking the penalty (with knowledge anatomy/anatomical pathology) is one aspect that also needs to be considered.

We know that there were medical practitioners in Freemasonry and indeed Dr John Beale MD was made deputy to Grand Master John Montagu Duke of Montagu in 1721. In his paper entitled "The Medical Profession and Freemasonry' detailed in Transactions of the Lodge Quatuor Coronati, R..F. Gould details a considerable number of medical freemasons. Medical teaching and knowledge at this time of anatomy and anatomical pathology would have been well established. While there is no evidence (as yet) available to me to prove this assertion I contend

[17] Anatomy for the Artist, Sarah Simblet Dorling Kindersley Publisher Ltd London 2001
[18] The London Dissector or System of Dissection. First American from the Last London Edition Philadelphia. A Finley and W.H. Hopkins 1810

that it is highly likely that medical knowledge was brought to the fore with respect the ancient penalties, as published.

The published penalties (as they relate to this paper) are detailed chronologically in Appendix B

A commentary on the published penalties and anatomy/pathology.

First degree penalty, as published

In the publications of this penalty we see changes from that in Pritchard's exposure in 1730 in its content and method to later exposures in 1760 and thereafter. We see in Pritchard the penalty to have "my throat cut, my tongue taken from the roof of my mouth" which changes in Three Distinct Knocks (1760) to ""my throat cut across, my tongue torn out by the root, .." and yet later, to binding myself under no less penalty "than to have my throat cut across, from ear to ear, my tongue torn out by its roots.." as detailed in the Ritual and Illustrations of Freemasonry. There is quite a difference in approach (apart from the obvious change in the whole penalty).

In the earlier exposed penalty of taking the tongue from the roof of the mouth would appear to be a specific thematic penalty and could be accomplished by one of several methods either by pulling the tongue out through the lips and cutting it off, cutting across or underneath it from side to side (unlikely) and thereby 'decapitating it'. Removing it via an incision in the neck is not a likely element at this early stage of the penalty. Certainly the theme of the tongue being the key to the secrets and kept in a bone box with ivory keys is quite eloquently stated in Pritchard's exposure.

The later publication of the penalty of having one's "throat cut across from, ear to ear, my tongue torn out by its roots.." is quite specific. I suggest it relates to known anatomical pathology techniques for that is exactly how the tongue is removed at post mortem examination. It is the way I was taught to do this part of the post mortem examination. There are two aspects to this which makes it seem more related to anatomical pathology and that is; the mention of 'ear to ear' incision (which allows access to the root of the tongue) and removing the tongue by its 'roots' (which do in fact, anatomically, lie in the pharynx). This then is medically plausible and indeed is a recognised post mortem method.

Second degree penalty, as published

The second degree penalties clearly evolved from the penalty which was initially the first degree penalty. 'My heart torn from under my naked left breast .." becomes, much later, "my left breast cut open, my heart torn therefrom .. …" and then "my left breast torn open, and my heart and vitals taken from thence and thrown over my left shoulder,.." and finally my left breast torn open, my heart and vitals taken from thence, thrown over my left shoulder …"

From early dissection we know that access to the heart and lungs was by removal of a section of the ribs and sternum as previously described (above). It is this aspect which may relate to this penalty inasmuch as either the tearing open of the skin and tissues to allow removal of the ribs and sternum to get access to the heart/lungs. Alternatively the removal of the segment of ribs and sternum could also be construed as 'tearing open' the left breast to expose the heart. Were this the case then it makes the penalty plausible. Certainly anatomical knowledge of the exact location of the heart and the method of removal as in the Virchow approach (see methods Annex A) would lend weight to the framing of this penalty. Removal of a heart is not a straight forward procedure and would require certain dissection skills (due to the attachment of arteries and veins). That the vast majority of medical procedures are conducted from the 'patient's' right hand side makes that latter part of the penalty logical from a medical point of view – that is the 'anatomical field' is freed up by shifting organs away from the operator. Later, we will see another very similar penalty which strengthens the medical concept I propose.

Third degree penalty, as published

In the third degree penalties as detailed the central theme of "my body severed in two, the one part to the South, and the other to the North, my bowels burnt to ashes in the South, and the ashes scattered before the four winds, that such a …" holds with some variations as detailed in Annex A.

From the work I have described above it is clear that one approach, anatomically, is to perform a cruciate incision to expose the abdominal contents and this approach was well known before the late 1600's. Such an incision as was performed in dissection and more importantly in terms of anatomical pathology could well be considered as severing a body in two and makes plausible and readily achievable the removal of the bowels, and other abdominal contents.

Selected other published penalties which relate to the theme of this paper are:

Most Excellent Master[19] [20]

In this exposed penalty we see what I consider is an anatomical/pathological process, namely, tearing open the right and left breasts to gain access to the heart. The penalty states:

"..under no less penalty than to have my breast torn open, and my heart and vitals taken from thence…" or

"..under no less penalty than to have my right and left breasts torn open, my heart taken from thence..".

Looking at the processes involved in dissection/post mortem, as detailed, this is not only plausible but it is accurate. It allows access to the ribs and sternum which are to be removed to gain access to the thoracic contents notably, in this context, the heart. This appears to directly relate to the published second degree penalty (above).

Royal Arch[21]

One penalty I find particularly interesting and which provoked me further into and to progress this work relates to that of the published penalty of this Order:

" …under no less penalty, than to have my skull smote off, and my brains exposed to the scorching rays of the meridian sun, should I knowingly or wilfully violate…"

This penalty is interesting, medically, as it is specific in the sense that it is the skull being removed from the top of the head. Earlier I have addressed the method of removal of the top of the skull for anatomical or post mortem purposes. I suggest that, in particular, that knowledge was specifically relevant to the establishment of this penalty as it is a unique approach to the brain and an illustration is attached in Annex C.

If that, in itself, is not proof enough, then I refer to the published penalty ascribed to the Knights Templar by Richard Carlile[22],1826, in which he states:

"….and the Saw Sign drawing the thumb or finger across the forehead, as indicative of the penalty of having the skull sawn asunder …"

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[19] Illustrations of Masonry, later retitled Mysteries of Freemasonry, William Morgan, 1827 (online)
[20] Ritual and Illustration of Freemasonry. Reeves and Turner London p 101
[21] Ritual and Illustration of Freemasonry. Reeves and Turner London p 115
[22] Manual of Freemasonry, Richard Carlile, 1826 (online)

This I can only ascribe to knowledge of the processes of anatomy/anatomical pathology – the exact method of removing the top of the skull to allow access to the brain for further dissection.

Masters Elected of Fifteen[23]

The penalty in the exposure for this Order again appears in the first part to relate specifically to the anatomy/anatomical pathology techniques theme specifically the first part which states:

"Under penalty of having my body cut open perpendicularly, and my head cut off and placed on the highest pinnacle in the world."

Intimate Secretary[24]

In this order again we find the anatomical dissection theme of 'opening a body to expose the contents'.

"The penalty of this obligation is to have the body opened, entrails plucked out, heart torn to pieces, and the whole thrown to the wild beasts of the forests, guaranteed by three amens."

This may well relate to the 'en masse technique' as cited in Annex A.

Others

Other penalties such as seen in Select Master relate to removing hands and eyes (eyes being plucked out from the sockets; which is not an easy task) and having ones body being quartered (again not an easy task). Here again the cruciate incision as mentioned reflects a 'quartering'.

Others I have read relate to removing ears, and in yet another, decapitation (which doesn't, of itself require any specific anatomical knowledge apart from the location of the head!). Yet other published ancient penalties refer to various attacks or assaults with an array of weapons such as daggers, arrows and spears, presumably related to the specifics of the particular Order.

Conclusion

From the foregoing examples I submit that, as the ancient penalties were developed and/or revised there was applied to them, either from the outset or in the variation, a knowledge of anatomical dissection or pathological processes. I have attempted in this paper to demonstrate that relationship. While the initial penalty may not have had a medical theme (and it seems that in some that is the case) it appears clear that many seem to have been varied or constructed with a detailed anatomical knowledge.

The knowledge of processes of dissection and later, anatomical pathology, appear to have extended its reach beyond the relevant professions to be included within the ancient penalties of freemasonry. That there were a considerable number of medical freemasons as detailed by Gould in his paper adds weight to my belief that their knowledge was brought to bear in the very early days of freemasonry with particular reference to ancient penalties.

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[23] Illustrations of Masonry, later retitled Mysteries of Freemasonry, William Morgan, 1827 (online)
[24] Manual of Freemasonry, Richard Carlile, 1826 (online)

Further, it is perhaps more than with passing interest to note that the actual processes of post mortem, especially the en masse technique which was taught in my medical school appears to relate specifically to the published ancient penalties of the three degrees, in order.

The first aspect of the en masse post mortem process relates to dissection of the neck and removal of the tongue and upper larynx and pharynx; the second part to the removal of the thoracic contents and the third part to removal of the abdominal contents. The skull and brain are attended to after this initial dissection.

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Appendix A

FOUR FUNDAMENTAL POST MORTEM TECHNIQUES

Virchow (1821 – 1902) Technique

In the Virchow technique, the organs are removed one by one and dissected as removed. This approach is good for demonstrating pathological change in individual organs, especially in high risk autopsies or where permission is limited to one organ. This organ can be immediately removed and examined. The disadvantage of this technique is that relationships between various organs may be hard to interpret.

Rokitansky (1804 – 1878) Technique

This procedure is characterized by in situ dissection, in part combined with en bloc removal. The term “Rokitansky technique” is used erroneously by many pathologists to designate the en masse technique.

En Masse Technique

Thoracic, cervical, abdominal, and pelvic organs are removed en masse and subsequently dissected into organ blocks. This is the best technique for preserving the vascular supply and relationships between organs. Another advantage is that the
body can be made available to the undertaker quickly, without having to rush the dissection and risk obscuring findings or destroying important specimens. The major disadvantage is that the organ mass is often awkward to handle, and the autopsy is difficult to perform without an assistant.

En Bloc Technique

Various modifications of the en bloc technique are widely used. Thoracic and cervical organs, abdominal organs, and the urogenital system are removed in functionally related blocks. This procedure is a compromise between the Virchow and en masse techniques, preserving anatomical relationships sufficiently for most cases while being simpler for one person to execute.

Appendix B

COMPARISON OF PENALTIES IN PRINCIPAL ENGLISH AND AMERICAN EXPOSURES

MD—***Masonry Dissected***, Samuel Prichard, 1730
TDK—***Three Distinct Knocks***, anon, 1760
J&B—***Jachin and Boaz***, anon, 1762
C—***Manual of Freemasonry***, Richard Carlile, 1826
M—***Illustrations of Masonry***, later retitled ***Mysteries of Freemasonry***, William Morgan, 1827
R—***Ritual and Illustrations of Freemasonry***, pub. Reeves, 1835–c.1890

First degree

MD
All this under no less Penalty than to have my throat cut, my Tongue taken from the Roof of my Mouth, my Heart pluck'd from under my Left Breast, them to be buried in the Sands of the Sea, the Length of a Cable-rope from Shore, where the tide ebbs and flows twice in 24 Hours, my Body to be burnt to ashes, my Ashes to be scatter'd upon the Face of the Earth, so that there shall be no more Remembrance of me among Masons.

TDK
All this I swear, with a strong and steady Resolution to perform the same, without any Hesitation, mental Reservation, or Self-evasion of Mind in me whatsoever, under no less Penalty than to have my Throat cut across, my tongue torn out by the Root, and that to be buried in the Sands of the Sea, at Low-Water Mark, a Cable’s Length from the Shore, where the Tide ebbs and flows twice in Twenty-four Hours;

J&B
under no less Penalty than to have my Throat cut across, my Tongue torn out by the Root, and that to be buried in the Sands of the Sea, at Low Water Mark, a Cable’s Length from the Shore, where the Tide ebbs and flows twice in Twenty-four Hours.

C
These several points I solemnly swear to observe, without evasion, equivocation, or mental reservation of any kind, under no less a penalty, on the violation of any of them, than to have my throat cut across, my tongue torn out by the root, and my body buried in the sand of the sea at low water mark, or a cable’s length from the shore, where the tide regularly ebbs and flows twice in twenty-four hours, or the more efficient punishment of being branded as a wilfully perjured individual, void of all moral worth, and unfit to be received in this warranted lodge, or in any other warranted lodge, or society of masons, who prize honour and virtue above all the external advantages of rank and fortune :

M
To all which I do most solemnly and sincerely promise and swear, without the least equivocation, mental reservation, or self-evasion of mind in me whatever; binding myself under no less penalty than to have my throat cut across, my tongue torn out by the roots, and my body buried in the rough sands of the sea at low water mark, where the tide ebbs and flows in twenty-four hours:

R
To all which I do most solemnly, and sincerely, promise and swear, without the least equivocation, mental reservation, or self-evasion of mind in me, whatever : binding myself under no less penalty than to have my throat cut across, from ear to ear, my tongue torn out by the roots, and my body buried in the rough sands of the sea, a cable-tow's length from the shore, at low water mark where the tide ebbs and flows twice in twenty-four hours.

Second degree

MD
none

TDK
under no less penalty than to have my heart torn from under my naked left-breast, and given to the vultures of the air as a prey.

J&B
under no less Penalty than to have my Heart torn from my naked Left Breast, and given to the Vultures of the Air as a Prey.

C
All these points I most solemnly swear to obey, without evasion, equivocation, or mental reservation of any kind, under no less a penalty, on the violation of any of them, in addition to my former obligation, than to have my left breast cut open, my heart torn therefrom, and given to the ravenous birds of the air, or the devouring beasts of the field, as a prey;

M
To all which I do most solemnly and sincerely promise and swear, without the least hesitation, mental reservation, or self-evasion of mind in me whatever; binding myself under no less penalty than to have my left breast torn open, and my heart and vitals taken from thence and thrown over my left shoulder, and carried into the valley of Jehosaphat, there to become a prey to the wild beasts of the fields, and vultures of the air, if ever I should prove wilfully guilty of violating any part of this my solemn oath or obligation of a Fellow Craft Mason;

R
To all of which, I do most solemnly and sincerely promise and swear, without any hesitation, mental reservation, or self-evasion of mind in me whatever, binding myself under no less penalty than to have my left breast torn open, my heart and vitals taken from thence, thrown over my left shoulder, and carried to the valley of Jehosaphat, there to become a prey to the wild beasts of the field, and vultures of the air, should I wilfully violate, or transgress any part of this, my solemn oath or obligation, of a fellow craft Mason.

Third degree

MD
none

TDK
under no less penalty than to have my body severed in two, the one part carried to the South, and the other to the North; my bowels burnt to ashes in the South, and the ashes scattered before the four winds, that such a vile wretch as I should be remembered no more amongst any manner of men (particularly masons).

J&B
under no less Penalty than to have my Body severed in two; the one part carried to the South, the other to the North; my Bowels burnt to Ashes, and the Ashes to be scattered to the Four Winds of the Heavens; that no farther [*sic*] Remembrance of such a vile Wretch may exist among Men (and in particular Masons).

C
All these several points I promise to observe, without equivocation or mental reservation of any kind, under no less a penalty, on the violation of any of them, than to have my body severed in two, my bowels torn thereout, and burnt to ashes in the centre, and those ashes scattered before

the four cardinal points of heaven, so that no trace or remembrance of me shall be left among men, more particularly among Master Masons :

M
To all which I do most solemnly and sincerely promise and swear, with a fixed and steady purpose of mind in me, to keep and perform the same, binding myself under no less penalty than to have my body severed in two in the midst, and divided to the North and South, my bowels burnt to ashes in the centre, and the ashes scattered before the four winds of heaven, that there might not the least tract or trace of remembrance remain among men or Masons of so vile and perjured a wretch as I should be, were I ever to prove wilfully guilty of violating any part of this my solemn oath or obligation of a Master Mason;

R
to all which I do most solemnly and sincerely promise and swear, with a fixed and steady purpose of mind in me to keep and perform the same, binding myself, under no less penalty, than to have my body severed in two in the centre, and divided to the north and south, my bowels burnt to ashes in the midst, and scattered by the four winds of heaven, that there might not the least remembrance remain among men or Masons of so vile and perjured a wretch as I should be should I ever be guilty of violating any part of this my solemn oath or obligation of a master Mason.

Other selected Orders/degrees and their penalties as they relate to this paper

Most Excellent Master

M
To all which I do most solemnly swear, with a fixed and steady purpose of mind in me, to keep and perform the same binding myself under no less penalty than to have my breast torn open, and my heart and vitals taken from thence and exposed to rot on the dunghill, if ever I violate any part of this my solemn oath or obligation of a Most Excellent Master Mason. (The sign is given by placing your hands, one on each breast, the fingers meeting in the centre of the body, and jerking them apart as though you were trying to tear open your breast; it alludes to the penalty of the obligation.)

R
To all which I do most solemnly swear, with a fixed and steady purpose of mind in me to keep and perform the same; binding myself under no less penalty than to have my right and left breasts torn open, my heart taken from thence, and thrown on a dunghill to rot, if ever I violate any part of this my solemn oath or obligation of a most excellent master Mason.

Royal Arch Mason

C
in addition to my former obligations, that I will not reveal the secrets of this degree to any of an inferior degree, or to anyone except he be a true and lawful Companion Royal Arch Mason, or within the body of a just and legally constituted chapter, under the penalty of having the crown of my skull struck off, in addition to all my former penalties..

M
All which, I do most solemnly and sincerely promise and swear, with a firm and steadfast resolution to perform the same, without any equivocation, mental reservation, or self-evasion of mind in me whatever; binding myself under no less penalty than that of having my skull smote off, and my brains exposed to the scorching rays of the sun, should I ever knowingly or wilfully violate

or transgress any part of this my solemn oath or obligation of a Royal Arch Mason. So help me God, and keep me steadfast in the performance of the

R
To all which I do most solemnly, and sincerely promise and swear, with a firm and steadfast resolution to keep and perform the same without any equivocation, mental reservation, or self evasion of mind in me whatever binding myself under no less penalty, than to have my skull smote off, and my brains exposed to the scorching rays of the meridian sun, should I knowingly or wilfully violate, or transgress any part

Knights Templar

C
The Penal Signs are the Chin or Beard Sign, which is a right hand thumb and finger stroking the chin or beard ; and the Saw Sign drawing the thumb or finger across the forehead, as indicative of the penalty of having the skull sawn asunder. The Grand Sign is emblematic of the death of Jesus Christ on the Cross, with arms extended, head dropping on the right shoulder, and the right over the left foot

R
binding myself under no less penalty than to have my head struck off and placed on the highest spire in Christendom, should I knowingly or willingly violate any part of this my solemn obligation of a knight templar.

M
To all this I most solemnly and sincerely promise and swear, with a firm and steady resolution to perform and keep the same, without any hesitation, equivocation, mental reservation, or self-evasion of mind in me whatever, binding myself under no less penalty than to have my head struck off and placed on the highest spire in Christendom, should I knowingly or wilfully violate any part of this my solemn obligation of a Knight Templar; so help me God, and keep me steadfast to perform and keep the same."

Masters Elected of Fifteen

M
Under penalty of having my body cut open perpendicularly, and my head cut off and placed on the highest pinnacle in the world.

Thrice Illustrious Knights of the Cross.

M
under the no less infamous penalty than dying the death of a traitor, by having a spear, or other sharp instrument, like as our divine Master, thrust in your left side, bearing testimony, even in death, of the power and justice of the mark of the holy cross.

Intimate Secretary

M
Under penalty of having my body quartered.

C
The penalty of this obligation is to have the body opened, entrails plucked out, heart torn to pieces, and the whole thrown to the wild beasts of the forests, guaranteed by three amens.

Select Master

R
Another sign is made by crossing the hands and arms, as in plate 17, fig. 4, with a quick motion draw the hands edgewise across the body downwards, as though you were in the act of quartering the body, and let them drop by your sides ; this is in imitation of part of the penalty of this degree, which is to have the body quartered.

Later in the degree work the following elaborates on the full penalty:
All this I swear, with a firm and steady resolution, without any mental reservation or self-evasion of mind in me whatever; binding myself under no less penalty, besides all my former penalties, to have my hands chopped off to the stumps, my eyes plucked out from the sockets, mv body quartered, and then thrown among the rubbish of the temple ; that there may remain no more remembrance of such a vile wretch, if ever I should wilfully violate this my obligation.

Exposures online

1730 ***Masonry Dissected*** (England)
www.freemasons-freemasonry.com/restrict.html
(need to apply for username and password)
http://www.phoenixmasonry.org/masonry_dissected.htm

1760 ***Three Distinct Knocks*** (England)
www.freemasons-freemasonry.com/restrict.html
(need to apply for username and password)

1762 ***Jachin and Boaz*** (England)
www.freemasons-freemasonry.com/restrict.html
(need to apply for username and password)

1826 ***Manual of Freemasonry***, Carlile (England)
http://www.geocities.com/celephais.press/

1827 ***Illustrations of Masonry***, Morgan (USA)
http://utlm.org/onlinebooks/captmorgansfreemasonrycontents.htm

re-titled ***Mysteries of Freemasonry*** (USA)
http://www.gutenberg.org/ebooks/18136
www.freemasons-freemasonry.com/restrict.html
(need to apply for username and password)

c.1835–1890 ***Ritual and Illustrations of Freemasonry*** (+ Phi Beta Kappa) (published UK, source Morgan, USA)
http://ia350604.us.archive.org/1/items/ritualillustrati00allyuoft/ritualillustrati00allyuoft.pdf