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Chapter 1 : Principles of Bloodstain Pattern Analysis: Theory and Practice - CRC Press Book

Excerpt from Theory and Practice of Bloodletting Without the knowledge Of its historical evolution, no branch of science can ever become an individual's true intellectual possession.

Cups were made of tin, brass, rubber, horn, and most commonly glass. Figure 25 shows a selection of cups of various materials. There were often suction devices attached to the cup to allow the removal of blood. Human lips, rubber bulbs, and brass syringes were all used as sources for suction. This technique entailed creating suction in a cup placed over the skin without cutting the skin. Often a wad of burning material or the end of a heat lamp figure 26 was placed in the cup to heat it. The cup was placed on the skin and a suction was created as it cooled. The skin then became engorged, presumably with evil humors that could improve health by coming to the surface. Figures 27, 28, and 29 show English ca. These sets often had multiple cups, suction devices, scarificators, spare blades, etc. Figure 30 shows a very rare cupping set consisting of two matching scarificators and a heat lamp all in solid silver. Each is inscribed with the makers mark and owners initials. The pieces are hallmarked for and were obviously used by an important bloodletter! These must originally have been made of stone or pottery. In the 18th and 19th centuries they were more commonly tin or pewter, though some rare silver examples are known. Figure 31 shows a variety of pewter bleeding bowls dating from about to These are of English manufacture. All of these bowls have inner concentric rings in ounce increments to measure the amount of blood. One must be very careful in collecting these antiques as often they are confused with porringers. These are pewter and often have two handles instead of one. Unscrupulous individuals have been known to add inner rings to porringers. While this is usually obvious upon close inspection, let the buyer beware! Since antiquity in Greece, Rome and Syria, leeches have been used to suck blood from many sites on the body. Leeches have both male and female sex organs fun fact of the day. Leeches were carried in a variety of containers that are now sought after by collectors. Figure 32 shows two glass containers. The small one was for several leeches while the bigger bowl may have been used to dish out the leeches in a pharmacy. Note the everted lip of both containers. These were used to attach a cloth to prevent escapees. Of note, there is some controversy as to whether the larger type of container was actually used as a fish bowl. Some were on pedestals and there is evidence for both types of use. I call them "leech mailboxes" as the front door flips down to gain access to the leech. Note the holes in this door. This allowed the leeches to get enough air. Physicians may have put a few leeches in this pocket-sized container for house calls. Perhaps the most beautiful leech containers are the large decorative ceramic containers with multi-colored floral and other motifs. These often are inscribed "leeches" in decorative lettering. They date to the midth century for the most part. Figure 34 shows a fine example. Once again, one must be cautious in purchasing these as reproductions are now commonplace. The thousands of dollars that an original costs have made these repros very well done! Figure 35 shows a rare patent model for an artificial leech made by Frederick Wolf in The spring was tightened and by a turning motion the cuts were made just as a leech would. The top of the device is then pulled back to evacuate the blood by suction. These devices were cumbersome to use and not popular for very long. As mentioned several times, one must be very careful to avoid reproductions, which are becoming more commonplace. Some English dealers have gutted wooden boxes, relined them with old looking velvet, and made a "custom" cupping set which looks genuine and original. There are specialty medical antique dealers and auction houses that have medical sales in the US and Europe. One can pay top dollar buying this way. A more reasonable way to get started is to scour country sales and local estate auctions. Cupping sets do appear from time to time as do spring lancets and scarificators. Often no one knows what these were used for and the price is quite low. I am a very active collector of all sorts of pre bloodletting antiques in excellent condition. Over the years I have acquired most of the more common examples of the types things I reviewed in this paper. However, I am very seriously looking for unusual bloodletting devices, leeching items, and cased cupping sets. I purchase items individually or by the collection and am always eager to hear from other collectors. I do have some items for trade as well. Thank you very much!

Chapter 2 : Full text of "Theory and practice of bloodletting"

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Steven Novella on July 7, Shares Dry cupping; a partial vacuum is created in the glass cup, drawing up the skin, and rupturing blood vessels to cause a bruise. I had previously thought that bloodletting was a uniquely Western cultural invention â€" part of Galenic medicine involving the balancing of the four humors, one of which being blood. In the West bloodletting faded away with the advent of science-based medicine in the 19th century. I was intrigued by this connection and have since been doing my own reading on the topic. It turns out that bloodletting was common throughout ancient cultures and not unique to the West. Chi, or the Chinese concept of the life force, was believed to be partly in the blood, and bloodletting could be used to free the flow of chi. This was closely related to the Galenic concept of using bloodletting to free the flow of static blood in the tissue. For example, in the ancient medical text of Suwen , we find: When heaven is warm and when the sun is bright, then the blood in man is rich in liquid and the protective qi is at the surface Hence the blood can be drained easily, and the qi can be made to move on easilyâ€¦ We also see in the text the connection of the functions of the body to celestial events. The concepts of blood, life force, and astrology all came together in acupuncture, but also in the ancient medical traditions of the West, just with different names and specific variations. The main concepts were balance and flow â€" lancing or needling were used to restore balance and flow to the natural rhythms dictated by the heavens. You may be surprised to learn that these concepts have a continuous cultural connection to the present. In general the concept of bloodletting has fallen out of popularity because it seems barbaric and because the real physiological function of blood is now understood, and so are the dangers of bloodletting. And so acupuncture is now purely about chi and no longer about blood, and even more scientific explanations for how it might work are being sought. Cupping was also developed as a method of drawing out the blood. But now it is used to draw out imaginary toxins. But the cultural roots go deep, and even modern practitioners, relying on ancient texts, still adhere to some of the bloodletting concepts. The Japanese version of acupuncture, Shiraku , which survives today also closely ties together bloodletting and acupuncture Shiraku means bloodletting. Peripheral blood-letting today is mainly carried out at the fingers and toes. At the tips of the toes, for example, are the qiduan points, located 0. These are said to be useful for emergency treatment for stroke or for numbness of the toes, also for redness, swelling, and pain of the instep of the foot. I will have to remember that the next time a patient comes in with a stroke. It seems that the amount of blood drawn has been significantly reduced, which is good, but the ancient bloodletting concepts are all there unchanged. Further, Acupuncture Today contains an article describing the use of bloodletting in modern acupuncture. As an example of the use of bloodletting, Abbate writes: It can invigorate the smooth flow of qi and blood, thereby picking up and facilitating its flow when the qi and blood need invigoration. An example of this scenario occurs when a patient presents with a wiry pulse and mild feelings of stagnation that indicate qi stagnation. The concepts of the flow of qi and blood are alive and well. I could have told you that was a quote from a medieval text and you probably would not have questioned it. Cupping is full of many, many myths When the actual history of acupuncture, bloodletting, cupping, and similar techniques are investigated we find that there are many modern myths about these practices. One myth is that there were completely different traditions in the various cultures, especially East and West. In reality, these were only cultural variations on the same themes â€" restoring balance and flow to blood and life energy in accordance to some astrological principles. There is also evidence of direct cultural contact â€" not just reinventing the same concepts. For example, the iceman is the frozen remains of a year old man found in the Alps. He was covered with tattoos of points and lines over traditional acupuncture points. This was probably an example of therapeutic tattooing â€" the tattoos themselves were meant to be therapeutic. There are also needle punctures at some of these points. Think about the implications of a person living near the Alps what is now Europe 5, years ago being tattooed over what later were known as acupuncture points. It is further a myth that what we know today as acupuncture or cupping were developed in line with their modern incarnations. In reality, these

techniques were just variations of bloodletting and were very deliberately and fairly recently distanced from their bloodletting roots to make them more acceptable. And finally it is a myth that bloodletting itself has been eliminated from traditional practice. It survives in muted form in various traditions. Novella also has produced two courses with The Great Courses , and published a book on critical thinking - also called The Skeptics Guide to the Universe.

Chapter 3 : Theory and Practice of Bloodletting - CORE

The author aims to set forth in a systematic manner the important progress of bloodletting, especially in its more recent experimental and clinical investigations.

Father of Medicine Medical historians generally look to Hippocrates as the founder of medicine as a rational science. It was Hippocrates who finally freed medicine fromthe shackles of magic, superstition, and the supernatural. Hippocrates collected data and conducted experiments to show that disease was a natural process; that the signs and symptoms of a disease were caused by the natural reactions of the body to the disease process; and that the chief role of the physician was to aid the natural resistance of the body to overcome the metabolic imbalance and restore health and harmony to the organism. Hippocrates was born on the island of Cos, off the southwest coast of Asia Minor, or present-day Turkey, around B. His father was a physician-priest in the Asclepion at Cos, and his family could trace its lineage back to the legendary Asclepius. Hippocrates lived a very long life and died at a ripe old age in the town of Larissa in Thessaly. The Hippocratic Revolution When Hippocrates began to practicemedicine, the established school of medicine was the Cnidian school. The Cnidian school considered the body to be merely a collection of isolated parts, and saw diseases manifesting in a particular organ or body part as affecting that part only, which alone was treated. Their system of diagnosis was also faulty, relying exclusively on the subjective symptoms related by the patient, while totally ignoring the objective signs of the disease. Hippocrates radically disagreed with the Cnidian school, countering that the human body functioned as one unified organism, or physis, and must be treated, in health and disease, as one coherent, integrated whole. As his main unifying theory for the holistic understanding of the human organism and how it functions in health and disease, Hippocrates used the concept of the Four Humors. Although the groundwork of humoral physiology and pathology had already been laid by his predecessors, Hippocrates finally brought the thory of the Four Humors into its classical form. Health is a harmonious balance of the Four Humors. Disease results from their disharmony and imbalance. Now, he enjoys the most perfect health when these elements are duly proportioned to one another in respect to compounding, power and bulk, and when they are perfectly mingled. Pain is felt when one of these elements is in defect or excess, or is isolated in the body without being compounded with all the others. There, they set about to revolutionize the art of medicine and put its theory and practice on a truer, sounder footing. A united confluence and sympathy between all four humors working together was necessary for good health. Pneuma - the Breath or Vital Force, and the Innate Heat, which were suffused into the blood from the lungs via the heart, gave the blood the power to sustain life. Hippocrates saw pepsis, or an orderly, balanced, harmonious digestion and metabolism of the Four Humors as being essential to all good health. In disorders of pepsis Hippocrates saw the origin of most disease. But even so, his surgical techniques for dislocations of the hip and jaw were unsurpassed until the nineteenth century. In therapeutics, Hippocrates saw the physician as the servant and facilitator of Nature. All medical treatment was aimed at enabling the natural resistance of the organism to prevail and overcome the disease, to bring about recovery. In the treatments he prescribed, Hippocrates was very sensible, pragmatic and flexible in his approach, favoring conservatism and moderation over radical or extreme measures. For this, he prescribed diet, gymnastics, exercise, massage, hydrotherapy and sea bathing. Hippocrates was a great believer in dietary measures in the treatment of disease. He prescribed a very slender, light diet during the crisis stage of an acute illness, and a liquid diet during the treatment of fevers and wounds. Hippocratic medicine was constitutionally based, so its approach to diagnosis and treatment was quite flexible. As a holistic healing system, Hippocratic medicine treated the patient, and not just the disease. Hippocrates was the first physician to systematically classify diseases based on points of similarity and contrast between them. He virtually originated the disciplines of etiology and pathology. By systematically classifying diseases, Hippocrates placed their diagnosis and treatment on a sounder footing. Although all of them are attributed to Hippocrates, the Corpus is of a heterogenous character, and many, if not most, of its works may actually have been written by his students. Still, we can be fairly certain that Hippocrates actually did author many books in the Corpus, including many original, groundbreaking works.

Airs, Waters and Places - the first major work on medical meteorology, climatology, geography and anthropology. Aphorisms - a collection of wise, pithy sayings giving advice on practical matters of diet, prognosis and therapeutics. Ancient Medicine - a defense of the empirical study of medicine against one biased by preliminary axioms and assumptions. Also deals with the Four Humors. He is most remembered today for his famous Oath, which set high ethical standards for the practice of medicine. His exemplary life has been a constant and enduring source of inspiration for doctors and healers down through the ages.

Chapter 4 : Antique Bloodletting and Leeching Instruments

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In the ancient world[edit] A chart showing the parts of the body to be bled for different diseases, c. Archagathus , one of the first Greek physicians to practice in Rome , also believed in the value of bloodletting. Hippocrates believed that menstruation functioned to "purge women of bad humours". During the Roman Empire , the Greek physician Galen , who subscribed to the teachings of Hippocrates, advocated physician-initiated bloodletting. There were two key concepts in his system of bloodletting. The first was that blood was created and then used up; it did not circulate , and so it could "stagnate" in the extremities. The second was that humoral balance was the basis of illness or health, the four humours being blood, phlegm, black bile, and yellow bile, relating to the four Greek classical elements of air, water, earth, and fire respectively. Galen believed that blood was the dominant humour and the one in most need of control. In order to balance the humours, a physician would either remove "excess" blood plethora from the patient or give them an emetic to induce vomiting, or a diuretic to induce urination. The blood to be let was of a specific nature determined by the disease: He linked different blood vessels with different organs , according to their supposed drainage. For example, the vein in the right hand would be let for liver problems and the vein in the left hand for problems with the spleen. The more severe the disease, the more blood would be let. Fevers required copious amounts of bloodletting. During medieval times bleeding charts were common, showing specific bleeding sites on the body in alignment with the planets and zodiacs. It was practised according to seasons and certain phases of the moon in the lunar calendar. The practice was probably passed by the Greeks with the translation of ancient texts to Arabic and is different than bloodletting by cupping mentioned in the traditions of Muhammad. When Muslim theories became known in the Latin -speaking countries of Europe , bloodletting became more widespread. It was also known in Ayurvedic medicine, described in the Susruta Samhita. Though the bloodletting was often recommended by physicians, it was carried out by barbers. This led to the distinction between physicians and surgeons. The red-and-white-striped pole of the barbershop , still in use today, is derived from this practice: Bloodletting was used to "treat" a wide range of diseases, becoming a standard treatment for almost every ailment, and was practiced prophylactically as well as therapeutically. Scarificator Scarificator, showing depth adjustment bar Diagram of scarificator, showing depth adjustment A number of different methods were employed. The most common was phlebotomy, or venesection often called "breathing a vein" , in which blood was drawn from one or more of the larger external veins, such as those in the forearm or neck. In arteriotomy, an artery was punctured, although generally only in the temples. In scarification not to be confused with scarification , a method of body modification , the "superficial" vessels were attacked, often using a syringe, a spring-loaded lancet , or a glass cup that contained heated air, producing a vacuum within see fire cupping. There was also a specific bloodletting tool called a scarificator, used primarily in 19th century medicine. It has a spring-loaded mechanism with gears that snaps the blades out through slits in the front cover and back in, in a circular motion. The case is cast brass, and the mechanism and blades steel. One knife bar gear has slipped teeth, turning the blades in a different direction than those on the other bars. The last photo and the diagram show the depth adjustment bar at the back and sides. Bloodletting in , one of only three known photographs of the procedure. Leeches could also be used. The withdrawal of so much blood as to induce syncope fainting was considered beneficial, and many sessions would only end when the patient began to swoon. Nevertheless, in , a lecturer at the Royal College of Physicians would still state that "blood-letting is a remedy which, when judiciously employed, it is hardly possible to estimate too highly", [22] and Louis was dogged by the sanguinary Broussais , who could recommend leeches fifty at a time. One British medical text recommended bloodletting for acne, asthma, cancer, cholera, coma, convulsions, diabetes, epilepsy, gangrene, gout, herpes, indigestion, insanity, jaundice, leprosy, ophthalmia, plague, pneumonia, scurvy, smallpox, stroke, tetanus, tuberculosis, and for some one hundred other diseases. Bloodletting was even used to treat most forms of hemorrhaging such as nosebleed, excessive menstruation, or hemorrhoidal

bleeding. Before surgery or at the onset of childbirth, blood was removed to prevent inflammation. Before amputation, it was customary to remove a quantity of blood equal to the amount believed to circulate in the limb that was to be removed. A French physician, Jacques Ferrand wrote a book in on the uses of bloodletting to cure a broken heart. He recommended bloodletting to the point of heart failure literal. In the s, the French imported about forty million leeches a year for medical purposes, and in the next decade, England imported six million leeches a year from France alone. Through the early decades of the century, hundreds of millions of leeches were used by physicians throughout Europe. A French sergeant was stabbed through the chest while engaged in single combat; within minutes, he fainted from loss of blood. Bleedings continued over the next several days. By 29 July, the wound had become inflamed. The physician applied 32 leeches to the most sensitive part of the wound. Over the next three days, there were more bleedings and a total of 40 more leeches. The sergeant recovered and was discharged on 3 October. By nineteenth-century standards, thirteen pints of blood taken over the space of a month was a large but not an exceptional quantity. The medical literature of the period contains many similar accounts-some successful, some not. George Washington asked to be bled heavily after he developed a throat infection from weather exposure. Within a ten-hour period, a total of â€" ounces 3. The psychological benefit of bloodletting to the patient a placebo effect may sometimes have outweighed the physiological problems it caused. Bloodletting slowly lost favour during the 19th century, after French physician Dr. Pierre Louis conducted an experiment in which he studied the effect of bloodletting on pneumonia patients. Yet, bloodletting persisted during the 19th century partly because it was readily available to people of any socioeconomic status. Please help improve this section by adding citations to reliable sources. Unsourced material may be challenged and removed. January Learn how and when to remove this template message In the absence of other treatments, bloodletting actually is beneficial in some circumstances, including hemochromatosis , the fluid overload of heart failure , and possibly simply to reduce blood pressure. In other cases, such as those involving agitation, the reduction in blood pressure might appear beneficial due to the sedative effects. Not all of these reasons are outrageous nowadays: The opening of the superficial vessels for the purpose of extracting blood constitutes one of the most common operations of the practitioner. The principal results, which we effect by it, are 1st. The diminution of the mass of the blood, by which the overloaded capillary or larger vessels of some affected part may be relieved; 2. A change in the composition of the blood, rendering it less stimulating; the proportion of serum becoming increased after bleeding, in consequence of its being reproduced with greater facility than the other elements of the blood; 4. The production of syncope, for the purpose of effecting a sudden general relaxation of the system; and, 5. The derivation, or drawing as it is alleged, of the force of the circulation from some of the internal organs, towards the open outlet of the superficial vessel. These indications may be fulfilled by opening either a vein or an artery. Controversy and use into the 20th century[edit] Bloodletting gradually declined in popularity over the course of the 19th century, becoming rather uncommon in most places, before its validity was thoroughly debated. In the medical community of Edinburgh , bloodletting was abandoned in practice before it was challenged in theory, a contradiction highlighted by physician-physiologist John Hughes Bennett. These advocates framed bloodletting as an orthodox medical practice, to be used in spite of its general unpopularity. Phlebotomy modern Today it is well established that bloodletting is not effective for most diseases. Indeed, it is mostly harmful, since it can weaken the patient and facilitate infections. Bloodletting is used today in the treatment of a few diseases, including hemochromatosis and polycythemia ; [36] however, these rare diseases were unknown and undiagnosable before the advent of scientific medicine. It is practiced by specifically trained practitioners in hospitals, using modern techniques. In most cases, phlebotomy now refers to the removal of small quantities of blood for diagnostic purposes. However, in the case of hemochromatosis , which is now recognized as the most common hereditary disorder in European populations, bloodletting venesection has become the mainstay treatment option. This person chosen did not have to be established at the time of the procedure, but this was possible.

Chapter 5 : Theory and practice of manual blood pressure measurement

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Chapter 6 : Greek Medicine: Hippocrates

Bloodletting (or blood-letting) is the withdrawal of blood from a patient to prevent or cure illness and disease. Bloodletting, whether by a physician or by leeches, was based on an ancient system of medicine in which blood and other bodily fluids were regarded as "humours" that had to remain in proper balance to maintain health.

Chapter 7 : Theory and Practice of Bloodletting - Europe PMC Article - Europe PMC

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Chapter 8 : Lotus | Master Tung's Bloodletting Therapy

Principles of Bloodstain Pattern Analysis: Theory and Practice presents an in-depth investigation of this important subject matter. A multidisciplinary approach is presented throughout the book that uses scene and laboratory examinations in conjunction with forensic pathology, forensic serology, and chemical enhancement techniques.

Chapter 9 : Bloodletting - Wikipedia

By the late s new treatments and technologies had largely edged out bloodletting, and studies by prominent physicians began to discredit the practice. Today it remains a conventional therapy.