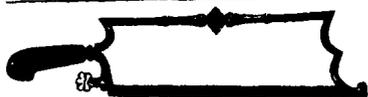
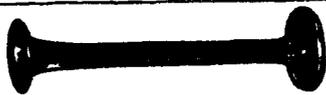


MEDICAL



COLLECTORS



ASSOCIATION

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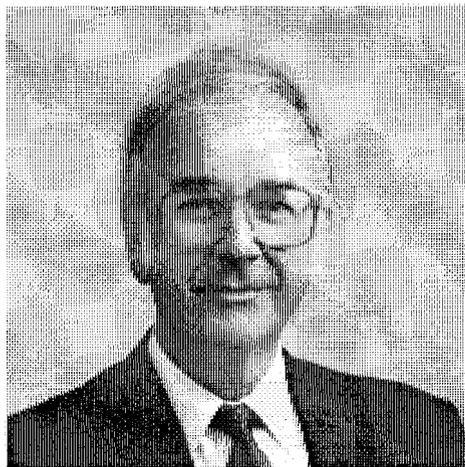
**Newsletter 36**  
**December, 1999**

Holiday Greetings to everyone. This is the last Newsletter for 1999 and as usual, it brings with it an announcement of next year's meeting, as well as the call for renewal of membership. I am happy to report that the meeting in Charleston was a wonderful success. The meeting was well attended by approximately 30 persons and the visits to the various museums, as well as the lectures, were all absolutely first rate. In addition, there were some very interesting dealer offerings which kept the attendees occupied. Charleston is a marvelous city, full of history, and a wonderful place to hold the meeting.

As noted on the cover sheet, we are anticipating that the next meeting of the group will be in Hartford, Connecticut. We are trying to time this meeting so that attendees will have an opportunity to view the changing foliage for that time of year. The Hartford Medical Museum is a very interesting spot and should be a fine venue for the meeting. Those of you who are fans of Mark Twain will have an opportunity to visit his old homestead, and there is a great deal of good antiquing in and around Hartford.

This issue contains the History and Pharmacy contribution of Bill Helfand, as well as one of many contributions from Alex Peck. This time Alex has provided us with a copy of a medicine spoon patent, which is quite interesting. Those of you who have seen the little white glass covers for medicine cups with a timer on them can appreciate the similarity between those devices for timing oral medication and this medical spoon with a small timer attached.

I am including, with this letter, a copy of the announcement of The Society of Civil War Surgeons, which holds its annual meeting next Spring on a related subject. I have never attended but I hear that this is a great meeting.



The "Can You Identify" column is active once again, this time with a contribution from Bob Kravetz. Please address your identifications to me of this most interesting device so that we can publish it with the next newsletter.

The two major articles in this Newsletter are of really great interest. We have a translation of Dr. Samuel Martin's thesis from the University of Edinburg on bathing. This thesis was translated into English for the medical exhibit at Rock Hall, which is the ancestral home of Dr. Martin on Long Island. It is a fascinating view of a very interesting subject. It is particularly enlightening when one considers that in his era most people considered bathing to be a very unhealthy pursuit. The text is being reproduced through the courtesy of the Friends of Rock Hall.

In addition to Dr. Martin's thesis, we have also received permission from Laurel Kendall, of the American Museum of Natural History, Department of Anthropology, to reproduce some of the Tankas from their web site. These are a group of Tankas devoted to healing. They are entitled "The Art of Tibetan Healing" and I have included several copies with the Newsletter. The web address is on the reproduction and I urge all of you, who are interested, to open up that web page and look at these most interesting items.

While I was at the meeting in Charleston, I visited Middleton Hall for a costume celebration that they have that time of year. One of the exhibits was a small tent set up as an apothecary, which was run by a member of the park service. The apothecary chest and instruments he was displaying were all reproductions and he brought to my attention G. Gedney Goodwin of Valley Forge, who manufacturers reproductions of 18<sup>th</sup> Century instruments. I have included a copy of his web page as well with this Newsletter.

I have also included a number of enclosures of items and events which may be of interest to the membership. These include: some brochures from The University of Iowa Hospitals and Clinics Medical Museum, an announcement of The 28<sup>th</sup> International Antique Scientific and Medical Instrument Fair in London, and an article by Lois Black about "George M. Teeple: Rural Practitioner." The article about Teeple very nicely compliments the Martin thesis. Happy Holiday.

Sincerely,

M. Donald Blaufox, M.D., Ph.D.



J. Oltmann, Lith. N.Y.

## Historical Images of the Drug Market—LIV

*by William H. Helfand*

By the time the 1906 Food and Drugs Act required its formula to be made public, Dr. Thomson's Celebrated Eye Water had already been on the market for over 100 years. The formula revealed that it contained opium, zinc sulfate, rose water, and ten percent alcohol. One purchased a small bottle of approximately two ounces of an amber colored liquid, which was diluted with eight parts of plain or rose water before use. Of course, like many earlier proprietary medicines, the formula had probably been changed many times since it was originally offered for sale in 1795.

Isaac Thomson was not an authentic physician, but his product met with success from

the time of its introduction, abetted by printed advertisements in newspapers and journals, beginning with an announcement in the 16 January 1811 issue of the *Connecticut Courant*. Towards the end of the nineteenth century Thomson's successors made extensive use of chromolithograph trade cards, examples of which can be seen in the illustration. Each of the twenty or so cards in the series measured about 10 x 7 cm, and contained a representation having something to do with an ophthalmic problem. The Celebrated Eye Water remained on the market until 1955, when declining sales and nagging questions from the Food and Drug Administration led to its demise.



PHOTO BY MICHAEL O'NEILL, U.S. JAMES WOODS 1972



JOHNSON, L. O. NY

JAMES BERNARD WILSON, OF PHILADELPHIA, PENNSYLVANIA.

DESIGN FOR A MEDICINE-SPOON.

SPECIFICATION forming part of Design No. 26,725, dated March 9, 1897.

Application filed January 25, 1897. Serial No. 620,691. Term of patent 14 years.

*To all whom it may concern:*

Be it known that I, JAMES BERNARD WILSON, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented and produced a new and original Design for a Medicine-Spoon, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

The leading feature of my design for a medicine-spoon is a spoon provided with a dial which forms a continuation of the handle thereof.

The figure represents a perspective view of a medicine-spoon embodying my design.

A designates a spoon, on the end of the handle B of which is the dial C as a continuation of said handle.

What I claim is—

The design for a medicine-spoon substantially as described and shown.

JAMES BERNARD WILSON.

Witnesses:

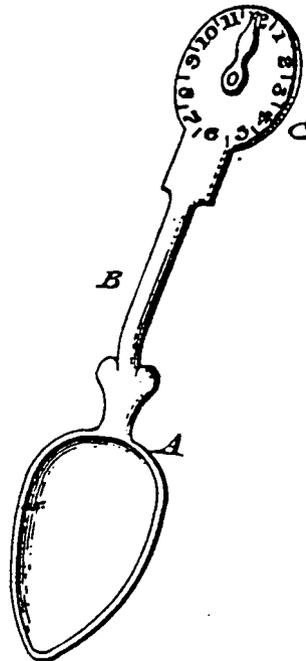
JOHN A. WIEDENSHEIM,  
A. P. JENNINGS.

DESIGN.

J. B. WILSON.  
MEDICINE SPOON.

No. 26,725.

Patented Mar. 9, 1897.



WITNESSES

*P. F. Taylor.*  
*W. C. Smith.*

INVENTOR

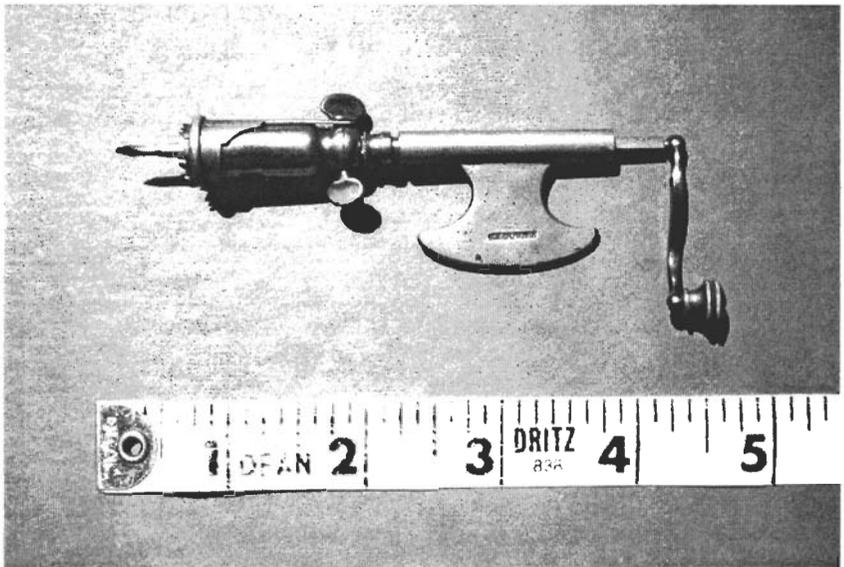
*James Bernard Wilson*  
BY *John A. Wiedensheim*

## CAN YOU IDENTIFY THIS?

**Submitted By:** Robert E. Kravetz, M.D.

**Description:** This small item 4 1/2" looks like it would be used in neurosurgery.

**I think this is a:**



# On Bathing

## Inaugural Medical Dissertation

### On Bathing

In pursuit of the Doctoral Degree, the highest medical honor, and all appertaining rights and privileges, this inaugural medical dissertation was presented to the learned committee by SAMUEL MARTIN, Anglo-American,

under the auspices of Divine Authority.

The presentation was sanctioned by the Reverend Gulielm Robertson, S.S.T.P.,

Head of the Academy of Edinburgh,

with the consent of the most distinguished Academic Senate

and following the decree of the outstanding Medical Department.

December 7, at the accustomed time and place

Edinburgh  
Printing-house of A. Donaldson  
1765

Samuel Martin gratefully dedicates the first fruits of his studies to his beloved father Josiah Martin, gentleman, on account of paternal love and friendship bestowed upon his son from the cradle up to this day, and by virtue of extreme diligence in cultivating, guiding, and cherishing his son's mind, with the assurance that non of the tokens of the filial piety will ever be forgotten.

This dissertation is also dedicated to the esteemed Gulielm Cullen, the worthiest colleague of the Edinburgh Royal College of Physicians, celebrated professor of Medicine and Chemistry at the Academy of Edinburgh, Samuel Martin's devoted preceptor, by virtue of the most

valuable instruction and because of other benefits which he has conferred upon Samuel Martin.

## Inaugural Medical Dissertation On Bathing

The habit of bathing in hot water is certainly an extremely ancient one, inasmuch as nature itself seems to have taught people its usefulness. It can be demonstrated from the authors of extreme antiquity that this habit had the widest implementation in the warmer regions.

Long before others, the Greeks and the Romans had accustomed themselves to bathing in the hot water to such an extent that they frequented baths not only for the sake of cleanliness but also for the sake of pleasurable experience. They even turned baths into displays of luxury. Even physicians themselves did not disapprove of this habit, and implemented it as a protection against diseases and as a remedy for the poor health. The Greeks called bath *ΒΑΝΑΒΕΙΟΝ*, the Romans called it *balneum*. We will employ the latter designation in the following study.

It was not our determination to argue that relatively frequent enjoyment of baths is less convenient for those who live under this chilly sky than for those who inhabit warmer regions where bathing was and is very popular. Still, it must not be doubted that bathing can and often must be applied as a treatment against diseases. Wherefore, since I am now seeking the highest distinction in medicine, I believe the subject of my dissertation is not unworthy.

The other reason I am undertaking this task is that, to the best of my knowledge, this topic has recently been unattended. The ancients, to be sure, cultivated baths, and under the pressure of their minds, which inclined solely to empiricism, were able to say whom baths would benefit and to whom they would be disagreeable. However, they did not sufficiently understand the nature of the human body to set forth the common effects of baths and establish with certainty every case which would require bath treatment.

Therefore, I shall attempt to set forth the common effects of baths and their various ways of affecting the body. Afterwards I shall demonstrate what diseases can be most effectively treated by bathing. In the latter part I shall make reference to facts ascertained from experiments.

## **Part I**

### *Common effects of bathing*

Bathing signifies the immersion of the entire body in warm water. We, however, will treat the bath as hot water or fluid, applied in any conceivable way to the body or its portions – whether they are immersed, or repeatedly poured over, or grow moist because of hot vapors.

Two types of warm water are thus applied: the first is the simple or common type, possessing no admixtures strange to the feelings; the other type is when the water is

saturated either by nature or in an artificial way with various substances, chiefly by those substances which nature stores away in the entrails of the earth and which are washed away from thence along with the rising water.

First, we are going to treat pure water applied to the body. For, although we do not deny that water saturated with certain substances can affect the body in a different way than pure water, we concede that this water perhaps behaves in a different way, in proportion to the various qualities of the substances present in it. Nevertheless, in such an inquiry one must start by investigating the nature of undiluted water. For the time being, my judgement does not allow me to trace the inquiry any further.

Meanwhile, I do not intend to make a deep inquiry into this matter, because it has not been proved by sufficient observation or experiment to what extent water saturated with other elements produces the same effects as undiluted water and to what extent they differ.

Multifarious effects are attributed to water saturated with foreign elements. Yet, it seems to me to have by and large the same effects as pure water. Thus, although the Toeplitzen baths in Bohemia, the Piperin baths in Switzerland, and many others, obviously have no foreign elements, they are nevertheless said to cure many diseases just like water saturated with foreign elements. Therefore, if we are able to set forth the quality of pure bathing water and its impact, we hope that there will remain little unexplained about saturated water.

To return to bathing in pure water: we believe that its cumulative effect lies partly in the separate operations of moisture and heat, but for the most part, in their combined operation. Many physicians who deal with the potentials of either cold washing or cold bathing are of the opinion that certain active qualities originate from the pressing weight of water; in fact, we believe that these properties are of such unimportant consequence that we determined to neglect them outright and only to touch upon the properties of moisture and heat. Therefore, we should first treat the subject of moisture.

Water poured on the surface of the body dissolves mucus that naturally adheres to it, and washes mucus away along with all kinds of dirt. Therefore, it removes many hindrances from the skin and renders its pores more accessible in order that exuding substance may flow out more easily. Vast amounts of this substance ought to continuously flow through the pores. Water also carries away different unhealthy substances which naturally adhere to the body by chance. Unless these substances are removed, they stand to engender various diseases and certainly to worsen them. Therefore, in the warm regions where heat brings forth more perspiration, in order to preserve good health, one must frequently wash away dirt accumulated from perspiration.

In addition to the unhealthy nature of substances which perspiration produces, in many diseases various components are accumulated indiscernably under the epidermis from whence, as an effect of exudation, they encrust the surface of the body and through

accumulation increase the glut of unhealthy substances and thus worsen the disease. All these water washes away, thus contributing much to a healthy condition.

Such are the general effects produced by moisture on the surface of the body if one is to disregard the question of temperature. And yet, it is obvious that heated moisture cleans the skin more effectively from all kinds of dirt and unhealthy substances. We will return to this theme later.

In fact, this accompanying function is peculiar to bathing.

In addition to this characteristic of moisture on the surface of the body, its effect lasts longer and in a certain way works into the epidermis itself which, even if it is not cleaned easily and completely, is nevertheless penetrated to such an extent as to become softened and relaxed.

Although the water does not penetrate further than the epidermis, we nonetheless believe that by softening and relaxing the epidermis alone it can affect the entire body to a considerable degree. Immediately under the epidermis the endings of countless nerves are set forth in such a way as to possess the most acute sensibility, and the epidermis, inasmuch as it is denser or more slender, harder or softer, seems to increase or diminish sensation.

Therefore, nothing prevents water poured on the surface of the body from lessening, softening and relaxing the epidermis and thus affecting the nerve endings underneath it. We propose that under the influence of water the appropriate nerve fluid can reach as far as the nerve endings, make them more sensible through relaxation, and perhaps bestir the nerve endings with pleasurable sensation.

It is certain that by affecting the nerves in this fashion water affects the adjacent parts and even the entire body. These effects are better achieved when the power of heat is employed. The latter joined with liquid almost always produces the above-mentioned effects.

It is commonly observed that water poured on the external parts of the body relaxes its adjacent portions and even the ligaments of the joints. As the moisture permeates these parts, it is believed to achieve its effect by penetrating the bodies as if they were some dry and absorbing substance. I do not agree with this theory, because in my opinion there are no apertures in the epidermis except for the endings of exhaling and absorbing vessels. When the epidermis is separated from these vessels, its texture will be thick enough to accumulate most subtle liquids under it. We observe this phenomenon on the example of an epidermis inflated into a shape of a bladder. But suppose water permeates through the epidermis. Mustn't anatomic experiments, by showing injurious consequences of this permeation, maintain that baths are good for nothing? If water should indeed flow through the skin, doesn't the cellular membrane, filled with oil, stand in the way of the water's advances? It is hardly possible for an abundance of water to

flow through the membrane as far as the ligaments without being hindered and without causing oedemata. However, to the best of my knowledge, nobody has noticed this.

Guided by such reasoning, I seem to draw the correct conclusion that water, on account of its supposed flow to the internal portions of the body, does not relax these portions. Nevertheless, though water does not reach internal areas by the route I described, there is nothing to prevent a great abundance of water from passing through the absorbing vessels which are available everywhere on the body. Therefore, water, by filling the vessels, is capable of relaxing the adjacent areas. Yet, its peculiar effect will be relayed differently. By flowing through the lymphatic vessels water dilutes the substance brought to these vessels from elsewhere. At the same time, the water must wipe off the lymphatic glands, since the water which flows to the lymphatic glands washes away the unhealthy tenacious substances, dilutes stagnant fluids, and by diluting and washing away often removes existing hindrances. At the same time, water absorbed in this fashion is somehow capable of diluting the fluids of the entire body. It is questionable whether water absorbed in this way dissolves the blood quicker than water received by mouth. It is a known fact that in the case of certain fevers and other disorders, when the consumption of water by mouth is impeded, baths are extremely useful. This hypothesis was remarkably illustrated by ingenious Thomas Simson, late professor of medicine at Fanus Andrea: "A young man, in addition to being snatched by fever, suffered from diarrhea, and his senses grew numb. Although he was overcome by excessive thirst, he clearly was not willing to consume water by mouth. In this case, I ordered that his feet be immersed in a cool foot-bath. When that was done, I immediately discerned an

astonishing decrement of water in the bathtub. Then I saw the instant and intense anal effusion of the scarcely colored water, in the fashion of the waterfall.”

Since we have set forth the peculiarities of moisture, it is now time to attend to the peculiarities of heat.

It is not difficult to perceive that heat, according to its temperature, is capable of producing diverse effects. It seems to us that we must treat here only of heat usually applied in bathing. The temperature of the bath varies from 80° F to 120° F. The warm bath is neither effective at a lower temperature, nor is it any good at a higher temperature. As is natural, the lower temperature heat is useless, and the higher temperature heat is intolerable.

As I said before, heat is capable of softening or rendering less dense the gluey substance which binds the solid parts of living creatures. It also softens and dilutes the parts themselves.

This heat, through the common ability of making all bodies less dense, softens stiff parts of living creatures and makes them all more pliant. Consequently, heat helps and increases the effect of softening and relaxing stiff parts of living creatures.

Heat also affects the fluids of the living creatures. As the surface of the body is exposed to atmospheric heat, so the internal heat is exposed to it to a lesser degree.

Therefore, the surface of the body and the parts adjacent to it constantly communicate their heat to the internal circular heat, and thus lose part of their own heat. This loss of the body heat will be greater or smaller, in accordance with the degree of difference between the body heat and the circular heat. If normal water, warm because of the atmospheric temperature, is applied to the surface of the body on every side, its temperature must be increased. Indeed, it is clear that this increase will take place in proportion to the increase of the water's temperature.

Thus, when the body is bathed in the water, the temperature of which does not exceed 64° F, it may feel a chill at first touch, but after a short while the body immersed in this water grows warm. Wherefore, it is inevitable that even this heat, most certainly increased by the heat of the living creature, dilutes the fluids of the body. Liquids of the vessels adjacent to the surface of the body will be diluted before others. But, if one applies outside heat for a long time, the diluted fluids flow inside, while other fluids take their place and get diluted in turn. Most likely, all fluids will be finally diluted in one way or another. Therefore, because veins, located near the surface of the body, swell when exposed to high atmospheric temperature or immersed into hot water, and because under the influence of cold they in turn get significantly compressed, we believe that nothing can be more likely than our reasoning.

Effects which we have discussed are produced by heat in the human body, just as they are produced in an inanimate body. But if we are to reflect that these effects are also produced in the living and feeling body, we find that they will be more numerous.

Atmospheric heat, familiar to the body, without exceeding the habits of the body, will always produce a pleasing sensation. This sensation, as indeed some agreeable experiences, relieves the totality of nerves and everything depending on the latter.

Furthermore, heat, through its diluting capacity and by functioning along with the fluid, softens and relaxes the nerve ends located under the skin. When heat produces the above-mentioned pleasing sensation, it, logically, decreases the tension of all nerves, inasmuch as the nerves of the skin accord considerably with the remaining parts of the body.

These effects commonly take place when heat is applied for the first time, or when it is moderate; by producing pleasure on the surface of the body and by relaxing it, heat also relaxes the rest of the body. But at the same time, the heat, whether it has been applied to the body for a long time (provided that the body's temperature increases considerably), or whether the heat's limit from the beginning surpasses by little the natural heat limit, stimulates the entire body under its strong influence.

Function, or, if one prefers to term it, fluidity of the nerves, is the principal tool of the faculty which gives life to the human body, and its stock can be called the foundation of the living bodies.

However, it is most likely that mobility and agility of this liquid either depend on a certain heat, or they are considerably assisted by it. In fact, very few and perhaps even no living creatures can live without heat. I believe that hardly any living creature can survive if the temperature of its body is less than the temperature at which water congeals, that is 32° F. Although this temperature is not excessively small, nevertheless many living creatures among the quadrupeds, whose nature is similar to that of a human being, grow numb and die even at temperature that raises mercury above 32° F.

For many living creatures, mobility of nervous liquid and even life itself absolutely cease at a temperature slightly below our atmospheric temperature. Many of these living creatures, after the temperature goes up slightly, return to life from the state of unconsciousness. These and many other observations of the same kind show that heat is an essential and primary stimulus of living bodies. It follows that heat will extensively stimulate the body, and, whether at application its temperature exceeds atmospheric or is just the same, it possesses the body until the body's inner temperature is considerably increased. It happens that heat thus immediately stimulates sensitive firm parts of the body, but it also dilutes the fluids and widens the vessels. Therefore, it will be sufficiently obvious that heat markedly stimulates the entire body.

To prove this I designed experiments for myself.

Before I took a bath, my pulse had been at 82 beats per minute, and my temperature had been 99° F. After an hour in the bath, my pulse counted 94 beats per minute, and my temperature was 101° F.

After water of equal temperature had been poured over my legs, within a few minutes, my pulse increased from 78 to 87. However, my body temperature did not increase. In both experiments, soon after the bath my pulse returned to its natural mode, and my body temperature decreased to below the temperature which I had measured prior to taking the bath.

After the bath, the body swells for a while, and the veins become swollen. This happens partly because the entire surface of the body and its vessels are relaxed and partly because of the stimulus applied to the body and to the vessels. It is credible that the fluids of greater abundance are stirred up in that location. This becomes even more credible when one observes that many vessels of eyes exposed to the steam of hot water are suffused with redness beyond what is usual. Furthermore, fomentations are believed to excite blood in parts of their application and in the adjacent parts. That is why, as Dr. Vintringam observed, fomentations often increase rheumatic pain.

These are generally the effects produced by baths. Now we should inquire how baths affect individual diseases.

## Part 2

In the case of certain diseases the usefulness of baths depends on the common effects which we have set forth above. Therefore, it seems best to us to apply the reasoning used in the first part to the second part of my dissertation. It also seems best to set forth in order each individual factor most efficient in treatment of particular diseases.

1. Bathing heals the skin, removes the unhealthy tenacious substances, and removes severe irritants. One must admit that the bath guards against many skin diseases which originate only because of these tenacious substances.

Furthermore, by cleaning the epidermis, bathing can remove all substances accumulated because of the disease either beneath the epidermis or in the vessels of the skin, and thus can also treat numerous skin diseases.

Baths, by softening and relaxing the epidermis and the parts adjacent to it, effectively remove the impediments which made that accumulation of substances unhealthy or which retain the disease. This effect is produced without regard to whether these impediments originate because of the dryness and rigidity of the solid particles or on account of the compression of bodily fibers. Wherefore, it is evident that baths are an effective remedy in all individual defects of the epidermis and the skin. It is of course desirable to distinguish these effects by their recognized individual names, but, as long as we are ignorant of the pathology of the skin, we must employ nonspecific terminology.

2. We have shown that baths clean and relax the epidermis and the parts adjacent to it, stimulate vessels located toward the surface of the body, and thus stir the blood in the vessels of the skin and push the blood into the vessels. Consequently, baths cause profuse perspiration. Therefore, it is obvious that baths alleviate every disposition of the skin produced by the obstructed perspiration.

Furthermore, many other ailments of the entire body are produced through the same obstruction of perspiration. These ailments can certainly be equally alleviated by baths.

This cleaning, relaxing and stimulating function of baths can treat not only diseases originating because of obstructed perspiration; there are also other diseases which, though not originating in obstructed perspiration, are, through the increase of perspiration, alleviated and even completely healed by baths.

In fact, ordinary perspiration continuously takes away our fluids. These fluids constantly withdraw from the healthy body, in order that they may not abound beyond what is normal. So, if even more fluids are vitiated than the natural perspiration can take away, it is essential that perspiration increase and alleviate corrupted internal fluids. Therefore, scorbutus, originating in this way, occurs more in the cold than in the warm climates. Naturally, baths, proscribed as a cure for scorbutus, can often help and in many cases even remedy the disease.

Yet not only corrupted natural fluids leave the body because of perspiration; many unhealthy substances mixed into the fluids by chance can also be expelled by the same route, provided by nature to dismiss all harmful substances. Thus, venereal disease is based upon a certain severe substance. We know little about its nature, though we know that, while we are unable to give it a right cure, we must treat it through removal of the substance. This substance can perhaps be removed in various ways, but the most certain way is to increase perspiration. We know for certain that this substance can be immediately and entirely removed through the increase of perspiration. Therefore, while handling this disease, even if we should not rely solely on baths, the latter are nevertheless capable of expediting any other treatment.

Meanwhile, as long as I am demonstrating with these arguments the efficacy of baths in causing perspiration, it should be taken into account that, at the increase of perspiration the entire body becomes more sensible. Thus, baths make people liable to cold and even throw them into a greater danger. Therefore, baths are more suitable for the warmer regions, where their usefulness is the strongest and where they can be applied most safely. In these much chillier regions, however, one must take precautions against the cold which a person may catch upon leaving the bath. Thus, Galen, who himself used to live in the warm regions, rightly admonished: "After a bath a chill must be avoided."

3. By pushing the fluids from the vessels of the skin and by relaxing the skin and the areas adjacent to it, baths are especially suited to the removal of all the obstacles in

the areas affected by water. Perhaps the faculty of moderately stirring the blood in these areas amid relaxation contributes to this effect. Indeed, it is on account of these two reasons that the bath often provides a great cure for many external inflammatory diseases, with the exception of erysipelas. In fact, since erysipelas is often accompanied by a certain unhealthy exuding substance, the application of liquids is less appropriate than the application of dry matter capable of absorbing unhealthy exuding substance.

4. By loosening the vessels and stirring the blood, and perhaps by accelerating the motion of liquid in nerves, baths cure atrophy. It is even more certain that by stirring the liquid of the nerves and the blood, baths counteract local paralysis in certain portions of the body. Nothing prevents those people whose body portions are enfeebled from taking a bath, provided that the blood flowing into the brain causes no disorder.

5. Above, we tried to explain how baths, by relaxing the entire body, relax its inner parts. It is also one of the bath's effects to relax frequently stiffened ligaments and tendons. Furthermore, twisted limbs can also be checked and straightened in the same way. Yet, bath gets rid of these disorders not only by relaxation; they also bestir suffering fluids in the nerves and the arteries of inner sections, and thus take away dryness and stiffness originating in the defect of the nerves. However, in the case of stretched muscles, by bestirring the nerves, bathing makes it possible for the nerves to overcome contraction of the stiffened muscles. It is most likely that through the same capacity to relax and recover the faculties of nerves and arteries, bathing heals the rheumatism of age, when the stiffness is accompanied by a local paralysis.

6. Baths, as we have shown above, relax not only the body and the parts adjacent to it. The same relaxing function pertains also to the other parts of the body, especially those parts, which take their sensibility from the skin. Therefore, if you apply heat or cold to the abdomen or to its lower portions, the intestines are promptly affected. Since their sensibility is in accord with that of the skin, baths relieve spasmodic contractions of the abdomen and alleviate the colic produced by contractions.

The kidneys are also remarkably in accord with the skin. Therefore, when a kidney stone descends the urethra and is held there by the spasmodic contraction of the urethra, bathing often helps to relax the constricted urethra, to allay pain caused by constriction, and to promptly remove the kidney stone from the body.

7. Many symptoms of psychotic and hypochondriac disorders are caused by spasms originating in the esophagus. Baths, since they alleviate spasms, are the most effective remedy against these diseases. Baths weaken the spasms because, as has been explained above, by relaxing nerves of the skin, on account of the accord between the skin and the rest of the body, they relax the nerves of the entire body. Therefore, one cannot find a more effective remedy against spasms and convulsions. This is clear from the outstanding work on the nervous diseases by the most renowned Whytt.

8. It is agreed that the relaxing function of baths gets rid of spasms not only in the portions of the body where the nerves are located; baths also affect spasms in the blood

vessels. Therefore, baths are useful against fever. This was recently demonstrated by the learned Gilchrist in the appendix to his book on the usefulness of navigation. Numerous medical experiments confirm this supposition. It seems that ancient physicians were not ignorant of it, as the words of Celsus, Galen and Trallian testify. Celsus argued: "Baths have a double advantage. On the one hand, after the fever is over, they contribute to the healthy initial consumption of food and stronger wine; on the other hand, they cure the fever itself." Elsewhere he holds: "Indeed, in these fevers which have certain revolution, there are two times for taking a bath: one is before the chill and the other is after the fever is over." Thus maintains Celsius.<sup>1</sup> Galen holds that "...during the first symptoms of fever the patients must be led to the bath where they must be profusely and gently rubbed." Elsewhere he maintains: "Taking warm bath of drinking water during the third day of fever does not hurt, because it dismisses the bile, whether you are to use the bath twice a day or whether the signs of digestion are not apparent."<sup>2</sup> Trallianus maintains: "Those who suffer from the third day of fever must receive considerable help from the bath, especially if someone is in the warm and dry disposition, though the offending substance has not been previously digested."<sup>3</sup>

It can be uncertain how baths affect people who suffer from fever. As far as we are concerned, it is not appropriate for us to initiate nebulous and obscure inquiry. I dare say, whatever should be established on this inquiry or whatever has already been established, there nevertheless remain many obvious spasmodic symptoms. Therefore, in order to establish whether or not baths are helpful against fever, their effects must be

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<sup>1</sup> Cels, *De Medicin.*, p. 93.

<sup>2</sup> Galen, *Meth. Med.*, lib. 8, cap. 3.

taken into account, at least part of them, and the faculty of loosening the spasms at the ends of the vessels, especially on the surface of the body, must be investigated.

Baths, by loosening stiffness, tension, or constriction of the solid portions and by stimulating them, can considerably stir and impel the blood in portions affected by them, just as they can in the vessels of those portions which are in accord with the immediately affected ones. Thus, baths seem very well fitted for expediting impeded and suppressed menstrual and haemorrhoidal flow. This can be illustrated on the example of those who practice medicine: in order to decrease the blood flow, the body must be kept cold, and this is the only medicine for blood effusion.

10. Baths have the faculty of stirring a great amount of blood in the portions affected. Therefore, if the blood fills only a small portion, and, on account of a great amount of blood drawn into this portion, there remains less blood in other more distant portions, the treatment should be sought in bathing. Indeed, if a portion of the body is immersed in the bath, it is possible to alleviate the other parts where the influx of blood is considerable. Therefore, in the case of diseases, in which the surplus of blood rushes into the head vessels, the foot-bath, by drawing the blood to the lower portions of the body, can alleviate the headache and delirium caused by the blood drawn into the head. However, many people have doubted that the temperature of the bath stimulates the entire body. No doubt, the bath, by affecting the entire body or many parts of it, stimulates the body if the temperature of the bath is more than usual. Yet we assert that, if only a small part of the body is affected by a moderate bath, the stimulating function of the bath will

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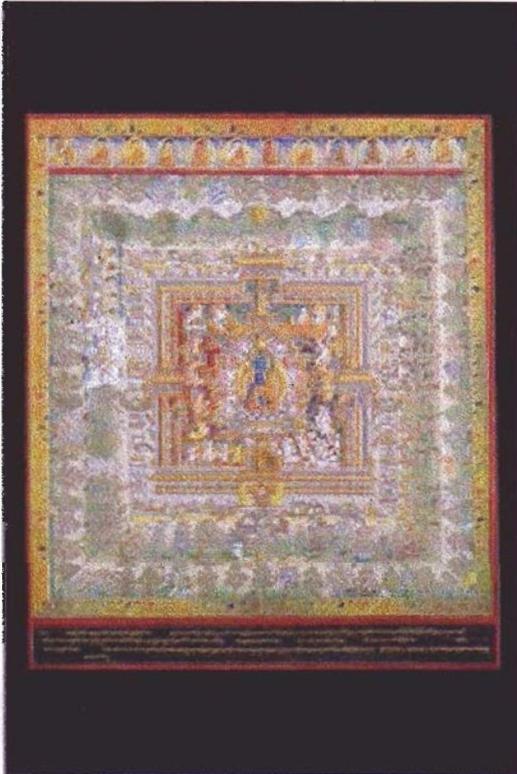
<sup>3</sup> Trallian. Lib. 12.735.

be more significant in this part than in all the other parts. Therefore, it must be admitted that the bath, by affecting only a small portion of the body, does not stimulate the rest of the body. Perhaps this can be illustrated by other arguments. We, however, rely on the testimony of those who practice medicine, since they have observed that the foot-bath frequently alleviates the headache and very rarely worsens it.

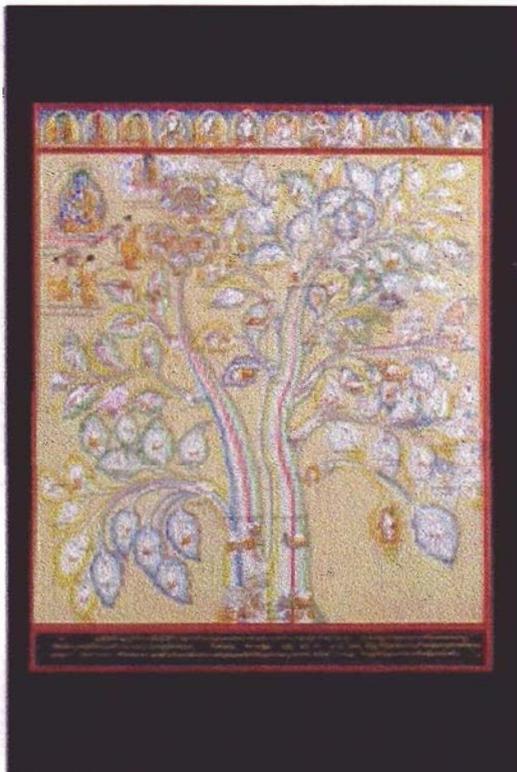
Finally, as it has been demonstrated above, the water of the bath can be absorbed by the body in great quantities. It must be said that water, by flowing through the vessels and the lymphatic glands, is especially fitted for washing away and diluting unwholesome and tenacious substances and for removing impediments from those glands. Therefore, baths get the upper hand over scrofula, which is frequently located in the lymphatic vessels.

I have tried to investigate the diseases treated by bath. If I omit some disorders which are alleviated by baths, I suggest that their treatment must follow the methods explicated above. If, however, in the first part, where general processes were discussed, or in the second part, where the subject of baths' medical efficacy was pursued, I incorrectly treated or omitted certain points (of which, I am afraid, many will be noticed), I hope, you will pardon a blundering young man. I claim pardon as if in my own right, since it was unbecoming to devote so much time to writing and to be carried away from studying medicine.

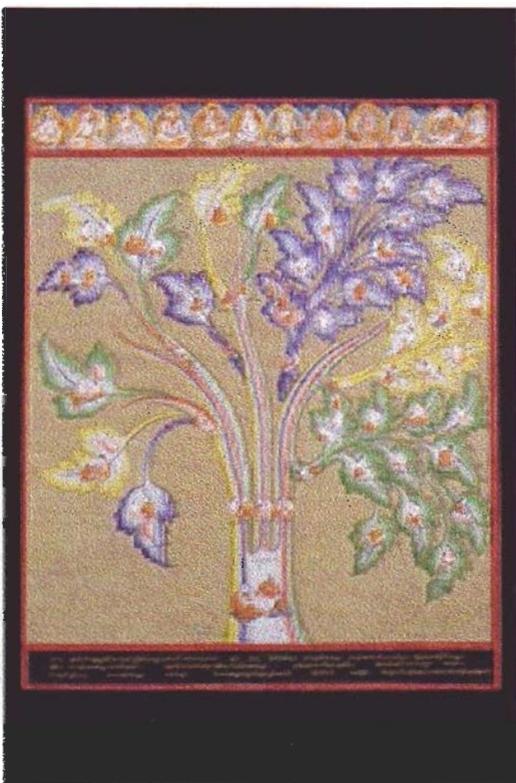
## MEDICAL TANGKAS



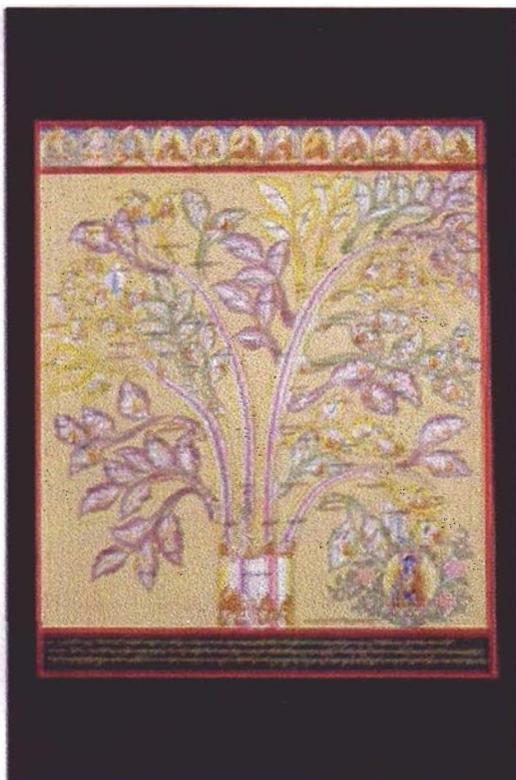
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BHAISAJYAGURU (MANLA)  
**Country :** BLANK  
**Locale :** BLANK  
**Culture :** TIBETAN  
**Native Term :**  
BHAISAJYAGURU (THE  
MEDICINE BUDDHA)  
**Material :** CANVAS, PIGMENT,  
GILT  
**Dimensions :** H:71.7 W:60.5



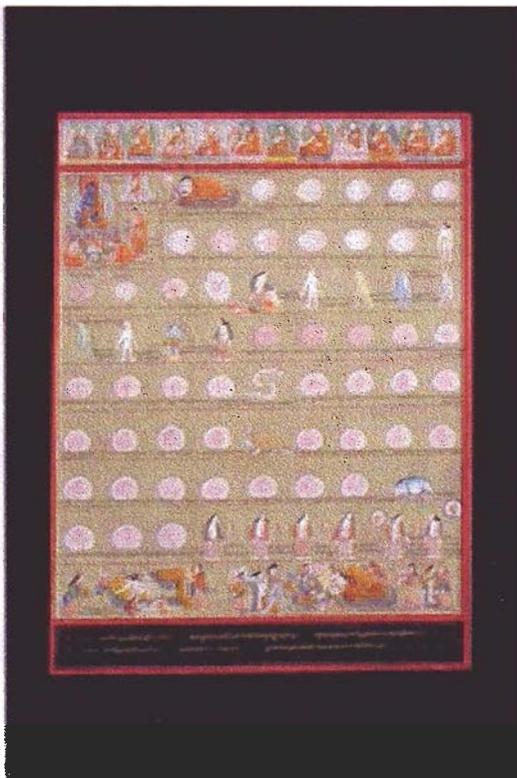
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**Locale :** BLANK  
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**Native Term :**  
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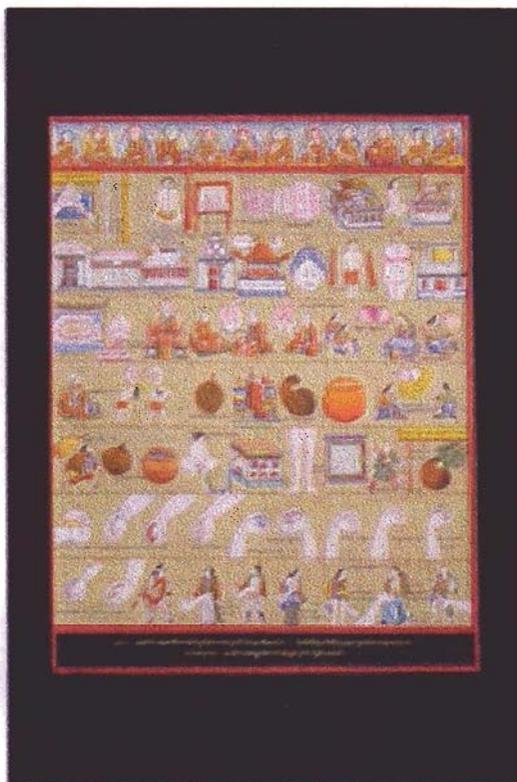
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**Native Term :**  
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GILT  
**Dimensions :** H:75.8 W:61



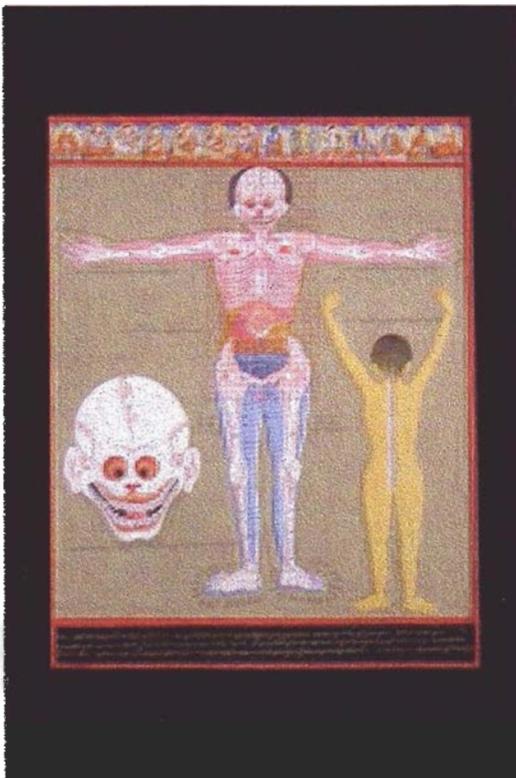
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**Locale :** BLANK  
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**Native Term :**  
**Material :** CANVAS, PIGMENT,  
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**Dimensions :** H:72.1 W:59



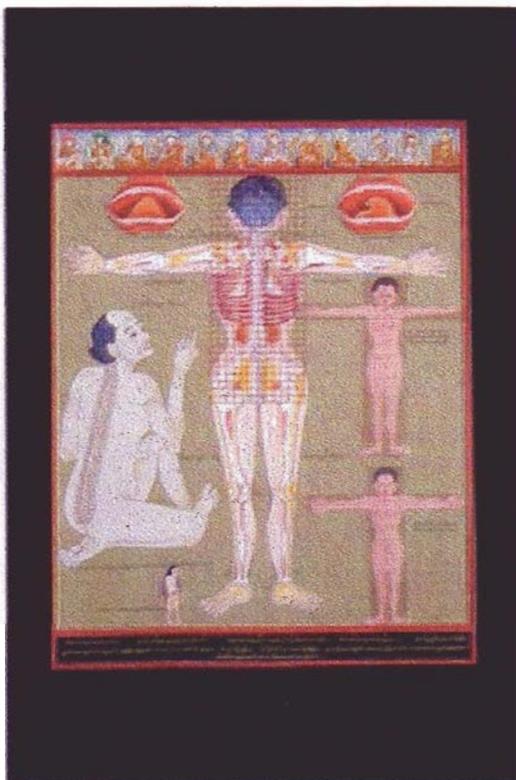
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**Locale :** BLANK  
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**Native Term :**  
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GILT  
**Dimensions :** H:72.1 W:54.1



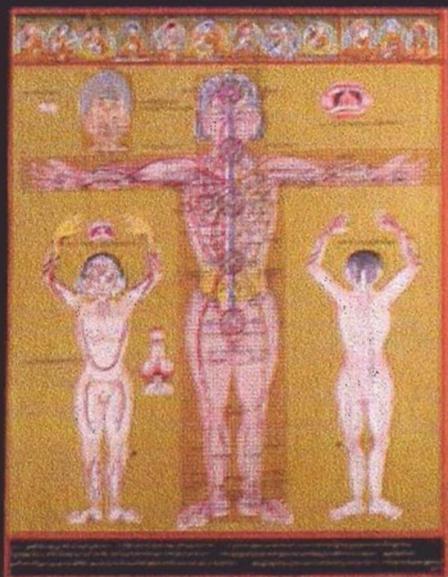
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**Locale :** BLANK  
**Culture :** TIBETAN  
**Native Term :**  
**Material :** CANVAS, PIGMENT,  
GILT  
**Dimensions :** H:76.5 W:58.5



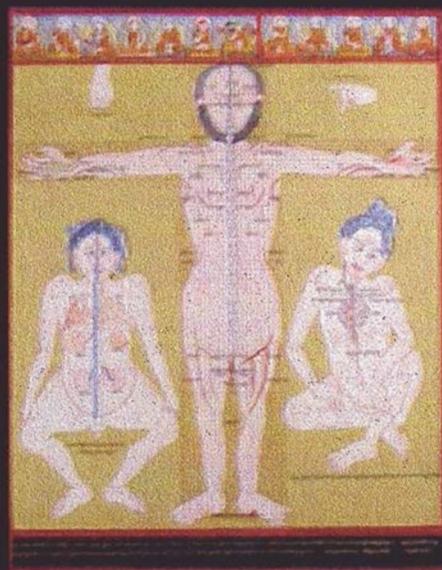
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**Country :** BLANK  
**Locale :** BLANK  
**Culture :** TIBETAN  
**Native Term :**  
**Material :** CANVAS, PIGMENT,  
GILT  
**Dimensions :** H:76.1 W:59.2



**Catalog No:** 70.3/ 5471  
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ANATOMY, BACK VIEW  
**Country :** BLANK  
**Locale :** BLANK  
**Culture :** TIBETAN  
**Native Term :**  
**Material :** CANVAS, PIGMENT,  
GILT  
**Dimensions :** H:75.1 W:58.1



**Catalog No:** 70.3/ 5472  
**Accession No:** 1998-24  
**Field Number:** BLANK  
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VESSELS, FRONT VIEW  
**Country :** BLANK  
**Locale :** BLANK  
**Culture :** TIBETAN  
**Native Term :**  
**Material :** CANVAS, PIGMENT,  
GILT  
**Dimensions :** H:75.8 W:58.7



**Catalog No:** 70.3/ 5473  
**Accession No:** 1998-24  
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INTERCONNECTING BLOOD  
VESSELS, BACK VIEW  
**Country :** BLANK  
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**Native Term :**  
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GILT  
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