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URINAL PATHOLOGY.—FOUR URINARY ELEMENTS.*

§ 140. From the condition of a man's urine, may be distinguished his defects, dangers, fevers (plagues,) and diseases, whether he be present or absent. However, we should first show what is the composition of the urine. It contains four radical elements.

FIRST. The humor of the blood which circulates in the reproductive organs.

*The following is the translation of an extract upon the same subject, purporting to have been made from the Book of "Hywel ddu Feddyg," a descendant of Einion ab Rhiwallon, by "Ieinf ap Wm. ap ff," A.D. A thousand,
v q s p u u

"The following are the elementary rules of urinoscopy. If the urine exhibits a yellow colour of a faint golden hue, or if it has the hue of refined gold; it indicates that food and drink are perfectly digested in the stomach.

If of a fiery red, like the sunset in the west—if red like oriental saffron—if a fiery red like a vanishing flame—if red like a portion of consuming fire; these four colours indicate that the food and drink have left the stomach in order that their digestion may be completed.

If urine is deep coloured like human liver, or the hue of (blushing) cheeks, like racked red wine, or greenish like the mane of oxen; these three colours concur in indicating that food and drink are properly digested in the stomach.

If water has a leaden hue, or an intensely black colour like black ink, or a dead black, like black horn; these three colours indicate the death of a man.

If it has the colour of clear spring water, if an opaline colour like transparent horn, or the colour of plain milk, or the hue of camel hair; these four colours indicate the nondigestion of the food in the stomach.

If it has a greenish blue colour, this indicates that less food and drink should be allowed the patient.

If the colour of ill bled meat, it indicates that the digestion of food has commenced in the stomach.

If a greenish hue like an unripe apple,—if the hue of a ripe apple; these two colours indicate that the food and drink are half digested in the stomach. And thus it terminates."

These extracts as well as the teaching of our "Meddygon" on the same subject, are of but slight value indeed, farther than they show how rude and empiric was the urinary diagnosis and pathology of our fathers. The first writer on urinoscopy was Theophilus, called Philaretus, a monk, who was Physician to Heraclius, who reigned in the first half of the 7th century. His treatise on the urine has little originality, farther than as being the first of a class of writings, distinguished above all others for chicanery and humbug. After him we find a succession of authors (particularly the urinoscopists of the middle ages,) pursuing dreamy speculations to a greater pitch of absurdity than can be readily conceived by those whose curiosity has notried them to pay visits of discovery to the bye paths of medicine. In nothing has modern medical research made greater advances than urinary diagnosis and pathology, thanks to the microscopist and the chemist. Vide "*Lilium medicinae*" of Bernard Gordon—Watson (of New York) on ancient medicine.

SECONDLY. That of the abdominal viscera for the performance of the functions thereof.

THIRDLY. That of the vessels which receive the various fluids of the cholera and fleuma (bile and phlegm).

FOURTHLY. That of the kidneys, supplying those fluids which pass to the bladder. From hence can be discerned all the signs of disease, the fluidity and colour of the urine indicating the evil and good signs.

URINAL DIAGNOSIS.

§ 141. Should urine abound in water, or resemble red, black, or green wine, or oil, or blood, or the urine of beasts, and a skilful person consider the essential causes thereof, attentively studying the same, he will understand which of these humors chiefly predominate, whether the fleuma, the cholera, the sanguis, or the melancholia. It is necessary that the urine be collected in a glass vessel, and left to settle till the second hour, when, by the light of the sun, the physician should judge the indications thereof.

SIGNS IN ORDER.—BLACK URINE.

i. If the urine be black, it will be necessary to renovate that patient's constitution by the most skilful means possible, frequently employing the bath and oil. Then the urine should be again examined, and if it should seem saffron-like and turbid, know that there is a painful disease in the person, produced by heat and dryness.

SINOPIE.

ii. If the patient be attenuated and evidently declining in strength, his veins prominent, or red (transparent,) and the urine similar in colour to sinople, it proceeds from the sanguis. By bleeding the patient in the left arm, he will be restored with little trouble.

THICK, OILY, OPAQUE AND SANGUINOLENT.

iii. If the urine should be thick, oily, deep red, not transparent in the rays of the sun, and sanguinolent, it indicates languishment and weakness of body, from excess of fever.

CURDLED.

iv. If the urine be curdled, it indicates a long continued fever.

RED AND CHANGEABLE.

v. If the urine be red, or brimstone-like, and seeming to change its appearance frequently, it indicates a dangerous fever.

CLOUDY AND GREENISH.—A CLOUD ON THE SURFACE.

vi. If the urine be cloudy and greenish at the commencement of a fever, or in two days afterwards, when secreted it seems thicker and thicker, the patient is sure to die. If these signs increase in number, though the urine does not thicken, it indicates a tedious fever.

If there be a sky appearance on the surface of the urine, it indicates a future fever.

FOUL URINE.

vii. If the urine seem foul in fever, it indicates heat and blindness, pain of head and shoulders, with deafness. If the patient is not relieved in seven days, he will die.

OILY.

viii. If the urine seems like oil during the heat of a fever, it indicates death, delirium or erysipelas. If it is not quickly removed, it indicates a softening of the brain.

FIERY, AND PASSED WITH PAIN.

ix. If it assumes a fiery hue, and is passed with pain, this indicates that the patient's food and drink are not properly

digested. It is accordingly expedient in such a case for the patient to restrict himself to spoon diet.

BLACK OR RED, WITH SEDIMENT.

x. If it be black or red, and there be sediment in the bottom, with retention, pain in the kidneys, and pain in micturition, the patient is in danger. If the urine be passed frequently, and in small quantities, then it indicates a stone in the bladder.

BLUISH WHITE, &c.

xi. If the urine be bluish white, during the heat of a fever, or reddish brown or red, accompanied with bleeding at the nose, it is attended with great danger.

WHITE.

xii. In persons with a diseased liver, when thin urine becomes white, it indicates future agony, but if it disappears suddenly, it indicates a boil.

BILIOUS.

xiii. If in the heat of a fever it has the colour of bile, being thick, with a whitish cloud and whitish granules floating thereon, it indicates a long continued languishing.

xiv. If more is passed than is proper, during the heat of a fever, and the colour is not good, though passed freely, it indicates danger at hand. If the urine is not natural, when passed, and it subsequently assumes a healthy colour, it indicates that the patient will pine away from future torment.

xv. If a man in the heat of a fever passes his urine sufficiently natural, but with white gravel therein, the fever not decreasing, it indicates danger.

xvi. If it abounds in water, the fever will increase, but he will be in no danger.

xvii. If the urine be dark, during the heat of a fever, the turbidness not subsiding, his illness will resolve itself into an ague in four, or perhaps three days.

xviii. If it be red, with much sediment, it will indicate a fever.

xix. If it has the colour of water, the fever will increase, but there will be no danger.

xx. Urine during the heat of a fever, if it be viscid and filthy, abounding with a gravelly sediment, with a cloudiness on the surface, indicates a tedious illness.

xxi. The urine of fever having sandy sediment, being sanguinolent in colour within, indicates disease of the kidneys.

xxii. If the urine should be frothy, like bubbles on water, let him not be surprised at the occurrence of any disease, as it indicates a fever at hand.

xxiii. If the urine be white in the morning, and afterwards red, it is well. It only signifies the proper flux of the body.

xxiv. If it be red first, and afterwards black, or if the urine has a mixture of those two colours, it indicates death.

xxv. If it be greasy on the surface, bubbles ascending therein, it is a bad sign.

xxvi. If it be greasy on the surface, and white sediment in the bottom of the vessel, it indicates pain in the viscera or joints.

xxvii. If the urine be blue, it indicates a disease of the viscera.

xxviii. An ill looking red urine, containing a gravelly sediment, and having a cloudiness on the surface, is a bad sign.

xxix. If it be very white, it is unfavourable. If it is dark in the morning, so much the worse.

xxx. If it be greasy, and preceded by great pain, it is in-

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dicative of death. If it be transparent, with a cloudiness thereon, the death of that patient will be nigh at hand. If it be light coloured in the morning, and lighter after dinner, it will be all the better. If it be red with a sediment, it indicates no danger. A dark hepatic urine indicates danger. A pale splenetic urine is dangerous. A red urine from dyspepsia is dangerous. A clear urine indicates a healthy condition. And thus it ends.

BLEEDING.

§ 142. In bleeding, the blood should be permitted to flow till the colour changes, and the stream of blood from black should flow till it is red. If thick, let it flow till it becomes more fluid. If it is watery, let it flow till it becomes thicker.

HEALTH.

§ 143. To secure constant health, drink daily, the first thing, a spoonful of the juice of the mallows.

BIRDS AND FLIES.

§ 144. To drive away birds or flies, put the mugwort in the places where they frequent, and they will disperse.

SPECK IN THE EYE.

§ 145. For a speck in the eye, put therein the juice of the ground ivy.

INTOXICATION.

§ 146. In order to be delivered from intoxication, drink saffron digested in spring water.

A TUMOR.

§ 147. For a tumor. Apply a cock or a hen thereto till the animal dies.

FALLING SICKNESS.

§ 148. For falling sickness. Let a dog be killed, and, unknown to the patient, put some of the gall in his mouth. It will never attack him again.

PROGNOSIS OF DEATH.

§ 149. In order to form a prognosis of the fate of a sick person, bruise the violet, apply to the eyebrows, and if he sleeps, he will live, but if not, he will die.

CHASTITY.

§ 150. If you would preserve yourself from unchaste desires, eat rue in the morning.

URINARY CALCULI.—TO DISSOLVE.

§ 151. To destroy urinary calculi. Take saxifrage, which grows in stony places, (it has obtained its name from its virtues in this respect,) temper with wine and pepper, drinking it warm. This will break the stone, and promote the passing of water. It will also promote menstruation, and cure diseases of the kidneys and uterus.

AGAIN.

Another way (of dissolving the stone) is to take the saxifrage and the seed of the gromwell, digesting them in boiling water. Let the patient drink this for six days, and he will be cured without fail.

AGAIN.—EXPERIMENT.

Another mode is to take the blood and skin of a hare, burning them to ashes. Then mix a quantity of this powder in warm water, and let the patient drink a spoonful of the mixture, fasting, and it will disintegrate the stone, causing it to be expelled. If you would wish to prove this, put a spoonful of the same powder in water, and deposit any calculus you please therein, and it will instantly slacken it.

THREE THICK INCURABLE ORGANS.

§ 152. There are three thick incurable organs; the liver, kidney, and heart. The reason why they are so called is.

that when disease has affected either of them, no relief can be given, but a painful death.

THREE THIN INCURABLE ORGANS.

§ 153. There are three thin incurable organs; the pia mater, small intestines, and bladder. They are incurable for the same cause as the others.

THREE COMPLAINTS WHICH OCCASION CONFINEMENT.

§ 154. There are three complaints which occasion long confinement. Disease of the knee joint, of the substance of a rib, and of a lung. For when matter has formed in either, a surgeon does not know when he may be cured till he sees him well.

HEMORRHOIDS.

§ 155. For hemorrhoids. Apply the calcareous droppings of peacocks (pounded) with fern roots, and it will cure it.

HYDROPHOBIA.

§ 156. The bite of a mad dog. It is a good thing to eat the root of radish.

BARRENNESS CURED.

§ 157. To render a woman fruitful, let her frequently eat lettuce, hot tallow, and pepper.

GREATEST REMEDY.

§ 158. What is the greatest remedy (or effort of surgical skill?) To remove a bone from the brain (to trephine) with safety.

LEAST REMEDY.

§ 159. What is the simplest remedy? To scratch one's hand until it is irritated, and then to spit upon it forthwith.

PAIN.

§ 160. An antidote for pain: seek the dittany, which may be obtained from cunning men; it is the best in all complaints.

A TUMOR.—REMEDY.

§ 161. For a tumor. Take the daisy and plantain (in powder,) mixing the same with drink, till it is thickened. Take also dust scraped from blue stone (sulphate of copper,) and administer to him in drink. It will cure him, if it is given him ere he sleeps.

SWELLING AFTER INJURY.—REMEDY.

§ 162. For a swelling, the result of an injury. Take the juice of the yellow bed straw, the juice of the plantain, rye meal, honey and the white of eggs. Make into a plaster, and apply thereto.

BOILS.

§ 163. For boils. Take the juice of the morella (mushroom,) plantain, barley meal, and the white of an egg.

STRANGURY.

§ 164. For strangury. Take the dead red nettle, and parsley. Make a plaster thereof, and apply to the stomach below the navel.

WARTS.

§ 165. To remove warts. Take the inner bark of the willow, make into a plaster with vinegar, and apply it.

HEARTACHE.

§ 166. For the heartache. Take the bark of the kegin-derw, the bark of the stinking goose foot, the plantain, and the shepherd's purse, boiling them in ditch (stagnant) water.

till it is wasted to a third. Take this water and make it into a gruel, with wheaten flour.

Another way is to take caraway water and goat's milk in equal parts, mixing plantain juice therewith, and boiling river granite therein. Let this be given the patient nine days, unmixed with any other drink.

DYSPEPSIA.

§ 167. For pain in the chest (dyspepsia.) Take a large quantity of black thorn berries, bruise briskly in a mortar, mixing very new ale therewith. Put this mixture in a new earthen pot, over its edges in the earth, for nine days and nights, giving it the patient to drink the first thing in the morning, and the last thing at night.

TO MAKE VINEGAR.

§ 168. To make vinegar. Take clean barley, and put in wine over night till the eve of next day.

TO PROMOTE THE UNION OF BONE.

§ 169. To promote the union of bone. Take comfrey, and bruise with wine, pepper and honey, drinking it daily for nine days, and they will unite compactly.

EYE SALVE.

§ 170. To make an eye salve. Take the juice * * * and the juice of fennel root, celandine, lesser celandine, sow's lard, honey, a little vinegar, an eel's blood, and a cock's gall, letting them stand in a brass vessel till an efflorescence takes place. This has restored sight to those who had quite lost it.

DIGNITY OF MEDICINE.

§ 171. Let all men know that it will be vain to seek anything except by effort. There can be no effort without

health; there can be no health without temperance in a man's nature, and temperance cannot exist in a man's nature without moderate heat in his extremities. God has decreed a supervision of the manner in which we should conserve the health, and has revealed it to his own servants, the philosophers and chosen prophets, who are full of the Holy Spirit, and whom God ordained to this profession.

§ 172. The Latins, the men of Persia and the Greeks (say,) what we choose we love, what we seek we think of. Therefore let all men know that God has given the men of Greece a special gift, to discern every art, and the nature of all things, to a greater extent than other nations, with a view to the preservation of human health.

§ 173. The philosophers and wise men foreknew that man was formed of four elements, each being antagonistic to the others, and each consequently requiring continual aliment, which if it do not obtain, it will succumb. If a man partakes of too much or too little food or drink, the body will become weak, fall into disease, and be open to injurious consequences. If he partakes temperately of food and drink, the body will acquire strength, and the health will also be preserved.

MODERATION.

§ 174. The philosophers have said. whosoever shall eat or drink more or less than he should, or shall sleep more or less, or shall labour more or less from idleness or from hardship, (being obliged to over exert himself :) or who, used to being bled, refrains from doing so, without doubt he will not escape sickness. Of these things we shall treat presently, and of what is most suitable for our use.

SAYINGS OF THE WISE AS TO FOOD.

§ 175. Wise men have declared, whosoever refrains from eating or drinking immoderately, and will only partake tem-

perately of food and drink as his constitution requires, shall enjoy health and long days, that is, a long life. Philosophers never said anything to the contrary. Desire, love, and the reception of worldly honour, these things fortify and assist life, so that they be gratified temperately. On which account, whosoever desireth life and permanence, let him seek that which is permanent and tends to prolong life.

MODERATION A MEANS TO PROLONG LIFE.—HIPPOCRATES
AND HIS DISCIPLES.

§ 176. Whosoever would prolong life, should restrain his appetite, and not eat over abundantly. I have heard that Ipcras¹ having attained to old age, whereby he had to suffer much from infirmity and the weight of years, was addressed by his disciples, thus:—"Thou great teacher of wisdom, didst thou eat and drink abundantly, wouldst thou have to endure all the weakness which thou dost?" Then Ipcras:—"My sons, (said he) I eat a proper portion seeing I live, I should not live if (with a view of prolonging mere human life,) I partook of food too frequently. Eating is not the one thing needful, when the prolonging of life is the object aimed at, for I have seen many die from too much eating."

EAT SLOWLY AND SPARINGLY.—MEN OF ARABIA.—TWO
RULES TO PRESERVE HEALTH.

§ 177. Whosoever, restraining their appetite, refrain from gluttony, and eat slowly, these shall live long; which may be thus proved. The men of Arabia, who dwell in mountains and pathless woods, are the most long lived (of mortals,)

¹ Hippocrates was a native of the island of Cos, and was regarded as the father of medical science. He delivered Athens from a dreadful pestilence in the beginning of the Pelopenesian war, and was publicly rewarded with a golden crown, the privileges of a citizen of Athens, and the initiation at the grand festivals. He died in the 99th year of his age, B. C. 361, free from all disorders of the mind and body; and after death he received with the name of *Great*, the same honours which were paid to Heracles.

as these circumstances prevent excessive eating and drinking. The health may be preserved in two ways. First,—that is, by partaking of such food as is most suitable to the time of life and the constitution, restricting himself to that sort of diet which he was reared upon. Secondly,—by evacuating duly, what is poured into the stomach from above.¹

A THEORY OF DIGESTION.

§ 178. Let all men know, that the human organism is antagonistic to food and drink, (decomposing both in the process of digestion,) and that every (animal or human) being is (naturally) verging upon disease. Also, animal organisms are corrupt from superabundant heat, which dries the spirit (anima) by which the body is nourished. Animal bodies also are corrupt from excessive heat of the sun, which dries the (animal) spirits; and this is particularly the case

¹ The following "Prescriptions about health and life" are attributed to Cattwg the Wise.

1. He that would attain a long life, let him play until he is twenty, labour until he is forty, and rest to the end of his days.

2. Let him arise with the lark, sing with the lark, and retire to rest with the lark.

3. Let him eat when he has an appetite, drink when he is thirsty, and rest when he is fatigued.

4. Let him avoid food that is too dainty, drink that is too strong, and work that is too heavy and troublesome.

5. Let him avoid too much food, too much drink, and too much labour.

6. Let him avoid contention, love peace, and divest himself of too many cares.

7. Let him be merry, generous, and just.

8. Let him have but one wife, be strong in the faith, and have a clean conscience.

9. Let him be meditative in the morning, industrious at noon, and social in the evening.

10. Let his meditation be pleasant, his games innocent, and his air salubrious.

11. Let his clothes be not old, his furniture be clean and sweet, and let him be content with his lot in life.

12. Let his dress be light, his food be light, and his heart be light.

13. Let his disposition be affectionate, his genius lively, and his friends numerous.

14. Let him keep the law of his country, the rule of his vocation, and the commandments of his God.

15. Thereby, his body will be healthy, his mind easy, and his conscience pure.

16. His life will be long, his end will be bliss, and his God will love him—Myr. Arch. iii. p. 56.

with the bodies of the animals upon which we feed. When the body is hot, strong aliments are required, as then they can be digested.

FAT AND DRY CONSTITUTIONS.

§ 179. When a (man's) body is fat and dry, luxurious juicy food is proper for him, for they will easily assimilate. In this way a man may preserve his health. Let him confine himself to such food as is suitable to his constitution. This has been proved.

A HOT HABIT.

§ 180. If a man's body be constitutionally hot, hot aliment is proper for him.

A COLD HABIT.

§ 181. If a man's body be constitutionally cold, cold aliments are proper for him.

A HUMID OR DRY HABIT.

§ 182. If the body be constitutionally humid or dry, cold aliments are forbidden him.

WHAT FOOD MOST SUITABLE FOR WEAK OR STRONG STOMACH.

§ 183. Strong food is most suitable for a hot stomach, as such a stomach is comparable to fire consuming loose flax. Weak food is most proper for a cold stomach, as such a stomach is comparable to fire consuming straw.

HEALTHY DIGESTION.

§ 184. The signs of a healthy digestion are, that the body be active, the understanding clear, and the desire for food frequent.

SYMPTOMS OF INDIGESTION.

§ 185. The signs of indigestion are, heaviness of body, with irritability of feeling superadded, a languid performance

of duty, swelling of the face, frequent yawning, dimness of sight, frequent eructations, attended with a bitterness of taste, (in the mouth,) this bitterness occasioning cardialgia, which extending to the body and limbs, occasions a dislike for food.

HOW TO ACT AT GETTING FROM BED, AND SUBSEQUENTLY DURING THE DAY, WITH OTHER HYGENIC MATTERS.

§ 186. When rising from bed, walk a while, stretch your limbs, contracting your head and neck. This will strengthen your limbs, and the contracting of the head will cause the (animal) spirits to rush from the stomach to the head, and from the head, when you sleep, it will fall to the stomach again. In the summer, bathe in cold water, for this will keep warmth in the head, which will occasion a desire for food. Then array yourself in fair garments, for a man's mind delights in fair things, and his heart is rendered lighter. Then clean the teeth with the dry bark of the hazel, as they will become all the fairer in consequence.* Your speech will be also most distinct, and breath sweeter. The standing posture should be at times practised, as it will do you much good, relieving the dura matter (membrane of the brain,) clothing your neck with power, investing your countenance with greater beauty, giving strength to the arms, improving your sight, preserving you from paleness, and adding power to your memory. Conversation, walking in company, and eating and drinking according to your usual habit, should be done in moderation. Use moderate exercise in walking or riding, as this will invigorate the body, and remove cardialgic pains, so that a man will be more hearty, strong, and the stomach will be warmer as well as your nerves more elastic.

* Giraldus Cambrensis assures us that the Welsh, in the 12th century, paid great attention to their teeth, rubbing them with either the leaves or the bark of the hazel, and refraining from hot meats and drinks, so that they were of dazzling whiteness.

WHAT TO EAT.

§ 187. When you eat, take that for which you have the greatest relish if you can, particularly leavened bread. If you eat simple food it will be more easy for the stomach to digest it. If (when unused thereto) you should nevertheless eat two kinds of food, plain and strong food, eat the strong first, for the inferior portion of the stomach is hotter than the superior, as the lime is nearer, from whence more heat will be derived.

RULES FOR EATING AND DRINKING.

§ 188. When you eat, do not eat away all your appetite, but let some desire for food remain. Drink no water with your food, as it will cool your stomach, preventing its digesting the food, and quenching the warmth thereof. But when you drink water, drink it sparingly, choosing the coldest water you can get. When you have done eating, take a walk in some well sheltered level piece of ground. When you feel inclined to sleep, do not sleep too much. Rest on your right side, then turn on the left, and double yourself. If you should feel pain in your stomach (cardialgia) and heaviness, put on extra clothing, in order to withdraw the heat from the stomach, drinking warm water, as this by producing vomiting will remove the unhealthy matter from your stomach. Walking much before food will heat the stomach. Much walking after food will injure the stomach, because undigested (in consequence of the labour) the food will fall to the inferior part of the stomach, and there generate many diseases. Sleeping before food will make a man thin, but sleeping after food will make a man fat. The night is colder than the day, and consequently the stomach will digest sooner by night than by day, because the colder the

weather, the better will the stomach digest, as the heat falls from the extremities, and concentrates itself about the stomach. If a man who is in the habit of eating twice a day, should do so once only, it will injure the stomach. If a man in the habit of eating once only daily, should do so twice, it will be hurtful to the stomach. If from eating at one period of the day, we change to another, it will do harm to the stomach. At all times, if necessity should arise, obliging one to make a change in ones habit, let it be done gradually. Also do not eat, till the stomach has become empty, and this you may know from the sense of hunger and the thinness of your saliva. If you eat without hunger, the animal heat will freeze. If you eat when hungry, your animal spirits will be as hot as fire, and whosoever does not then take food, his stomach will fill up with insalubrity, which will produce headache.