

According to the theory of M. Burin Dubuisson, a small quantity of perchloride of iron is sufficient to thicken (*épaissir*) the blood so much as to retard or impede the capillary circulation. This action, however, is temporary, and must not be confounded with the regeneration of the blood accomplished by that agent. M. Dubuisson considers, with M. Mialhe, that the assimilation of iron for the formation of blood-globules takes place while the iron is in a state of peroxide, and not of protoxide; that ferruginous protoxides do not act upon the albumen; that they are absorbed; that they circulate in the blood, pass to the lungs, and are converted by the influence of the oxygen inspired into peroxides, and then exercise their influence on the blood. Persalts, however, by not requiring such preliminary transformations, act much more rapidly than protoxides do—the acid of such salts unites with the soda in the blood, and the peroxide with the albumen, forming an albuminous material at once taking part in the formation of blood-globules.

On the other hand, the partisans of the dynamic theory, while admitting the diminution of red globules in the blood during chlorosis, and their increase in quantity following the administration of iron, do not consider these facts as proving that this iron has been absorbed. They do not regard chlorosis as resulting from diminution in the quantity of iron contained in the blood. It would appear, from recent experiments, that, notwithstanding the paucity of blood-globules, the quantity of iron is not defective; and they therefore conclude that the favourable action exerted by ferruginous preparations is due to the influence they have in exciting the processes of digestion and nutrition—that is, on the digestive apparatus (MM. Trousseau and Pidoux). According to M. Meran, of Bordeaux, who has advanced certain hypotheses on this matter, the perchloride of iron acts directly on the capillary system by its tonic and stimulant powers—contracting the coats of these vessels, so as to prevent the escape of their contained fluid, and in this way arresting hemorrhage.

Looking at both these exclusive theories, M. Devergie considers neither of them to be well founded. However much the mere chemical action of such substances on the blood may seem to account for their effects, we cannot, says he, institute a comparison between the digestive or vascular system and the apparatus of a laboratory; and, on the other hand, the rapid appearance of ferruginous preparations in the blood, and the immediate effect it produces in hemorrhage, preclude the idea of its action being exclusively of a mere dynamic or exciting nature on the digestive or vascular organs. He rather considers that these preparations act in both ways; that is, by their entering at once into the blood and improving its quality, while at the same time they exert a beneficial effect on those organs on which they seem to have a stimulating influence—thus reconstituting the blood and improving the digestion simultaneously.

The two theories here attacked, and the hypothesis advanced in refutation of them, form a question involving the whole laws of therapeutics, and by its connections extending to the general action of all medicines. M. Trousseau has all along objected to the doctrine of such remedies as this acting exclusively by their chemical properties. At two consecutive meetings of the Academy of Medicine, he has accordingly discussed the question thus opened up; and, in concluding his address before that body, epitomizes the whole drift of his observations in these words: "I have now concluded. The science of therapeutics will be nearer the truth when our ignorance of the mode of action of remedies is more candidly confessed, when each drug is more specially studied, and when experimental research is more sedulously conducted."—*Edinburgh Med. Journ.*, Oct., 1860, from *Gazette des Hôpitaux*, May and June, 1860.

8. *Thermo-Therapia, or Heat Cure.* By ERASMUS WILSON.—For a knowledge of thermo-therapia, medical science is indebted to Mr. Urquhart. Thermo-therapia is the application of atmospheric air at a high temperature to the surface of the body, for the relief of pain and disease. I will endeavour to retrace my own experience, on my first introduction to the *thermæ*. It was the winter time, the season bitterly cold; my inception as a "companion of the bath," took place in the private *thermæ* of my esteemed friend, Mr. George Witt. As an example of simplicity of construction, Mr. Witt's *thermæ* may be usefully

taken as an illustration. He had at the back of his house, a room twenty feet long by ten feet in breadth, and twelve feet high, with a window looking out upon a lead flat such as is common in London houses. To convert this room into a thermæ he divided it into two compartments by means of a wall which crossed it at about one-third from its further end. He had, thus, two apartments, an outer one, the cooling room or *frigidarium* of the Roman thermæ; and, an inner one, entered by two small doors (inner and outer) in the partition wall, the *caldarium*, *calidarium*, or *sudatorium*. Having left my garments in a portion of the outer apartment which served as a *vestiarium*, and girt around the loins with a *cummerbund*, I entered the calidarium; the temperature was delicious, such a contrast with the exterior world. The wind and snow were raging without, while here was a paradise of 135 degrees of Fahrenheit. Within this hallowed nook anxiety, and care, and fatigue, disappeared; I stretched forth my limbs in peace and enjoyment; the brain seemed to think more lightly and pleasantly, and my ideas flowed brightly and calmly.

My friend, Mr. Witt, in the course of a few minutes was streaming with perspiration which ran down his face in rills, and dripped from his elbows and finger-ends in continuous drops, while my skin was as yet dry. I was struck also with the rich and healthy complexion of his skin; it took its hues from the free circulation of the pure arterial stream through the capillary plexus of the derma; as he drew his fingers forcibly across his chest, the white traces left by their pressure were instantly replaced by the glowing vermilion of the arterial blood. There were no gorged capillaries in that skin; no venous transformation in that cutaneous plexus; no deposits of unhealthy colouring matter either in the cuticle or in the tissues beneath; no pallor; no excess and no deficiency of fat; no choked pores; no wrinkles from loss of elasticity and contractility of the fibrous and muscular structures of the corium; no abnormal or deficient sensibility of the nerves; all was, as nature made it, perfect and beautiful. I looked for the first time in my life on a really healthy skin. How very curious and striking was the difference between my friend's skin and that of every one present; one gentleman, a finely-built handsome man, with a remarkably capacious chest, had too great a preponderance of adipose tissue, while the hue of the skin in an oblique light was a bright golden yellow. In another, the muddy tinge of the skin discovered the impure and muddy condition of the blood. The habitual use of the thermæ removes these discolorations, these indications of imperfect elimination, by drainage through the perspiratory system, and while it gives beauty to the skin, bestows health on the entire economy. After a free perspiration of half an hour's duration, I was anointed with soap and had a rub down with a wisp of white fibre called *lyff*, the fibre of one of the palm-trees commonly used in the east for the purpose to which it was now being applied. To the friction with soap succeeded a shower of warm water, then a douche of cold water, after which I was made to sit still for some minutes until the warmth of the skin was restored.

From the calidarium I passed, therefore, to the frigidarium, on this occasion, mid-winter, and a piercingly cold snowy day, truly deserving its name. I was then *cloaked* in a sheet taken from one of the pigeon-holes of the *columbarium* standing in the corner of the room, my *cummerbund* was allowed to drop on the floor, and I was made to recline upon a cane couch immediately under the open window. How cool and pleasant were the puffs of wind that played over my face and limbs; how different their impression on my skin to what they had been an hour before. I needed not the assurance of my friend that there was no fear of catarrh or bronchitis; my own feelings told me that I could resist any amount of cold, and I was obliged to suppress a longing to walk out upon the leads with no other covering than my sheet, into the midst of the sleet and wind.

After awhile I exchanged the horizontal position on the couch by the open widow, to a sitting posture; the sheet was thrown off from my back and limbs; the moisture of the surface was dried up, no wiping, excepting of the head and face was practised or required, the skin felt smooth and warm, and I was permitted to dress, but with the injunction that I was to dress leisurely, lest the perspiration, which had ceased, should again be excited. It is worthy of notice, that great attention is paid to the temperature of the skin during the curriculum

of the thermæ; after the cold douche, we return to the calidarium to recover any waste of heat; and in the after cooling of the body in the frigidarium, the whole of the moisture must be dried off the skin, and perspiration must be wholly suppressed, as indicated by a peculiar smoothness and polish of the surface, before we are qualified to resume our dress. All clamminess of the skin must have ceased entirely before we resort again to our usual coverings.

Among my fellow subjects of the thermæ, I have seen numerous examples of relief from painful affections dependent on morbid composition of the blood. Several were cured of gout, of rheumatism, of neuralgia. A clergyman and doctor of divinity, who resorted to the thermæ to reduce redundancy of adipose accumulation, suffered habitually during the winter season from catarrh, bronchitis, and neuralgia, and was often laid up for weeks together with these affections. Since he has adopted the use of the thermæ, which he enjoys excessively, he has diminished in bulk; he has lost all proneness to catarrh and bronchitis, and no longer experiences the pangs of neuralgia. Recently I was much interested in seeing a case of eczema of the face treated throughout by the thermal process alone; the patient lived in the thermæ for several days, he used very high temperatures, and he succeeded completely in curing his disease. It was curious, he remarked, to observe the patches of eruption; they yielded no perspiration, and looked like so many parched up islets in the midst of the surrounding copiously perspiring skin. At about the same time a medical friend consulted me for prurigo senilis. "You know Mr. Witt; go and ask him to admit you to his thermæ," was my counsel. The next time I paid a visit to my friend's thermæ, there was my elderly patient, luxuriating in the fulness of enjoyment. That day he left his prurigo senilis behind him in the calidarium, and I believe has had no reminder of it since. He went back to his home on the coast, and now offers a seat in his own thermæ to his curious or suffering friends.

I have hinted at the curative effects of very high temperatures; and both Mr. Urquhart and Mr. Rolland have mentioned to me important results from this process. It occurred to Mr. Urquhart's mind that as *fever-heat* was represented by 112° he should be able, could he create a temperature higher than fever-heat, to supersede the stage of fever at once. Thus, taking the beginning of the cold stage, which nature seemed to struggle painfully to overcome, he was enabled by a high thermal temperature to cut it short at once and to pass over it and the hot stage to that which nature seemed desirous of reaching—namely, the sweating stage. He believes that at a certain temperature he can put a stop to the fermentative process of zymotic diseases; and, at a higher temperature still, destroy animal poisons. He suggests, moreover, a curious and important inquiry—namely, the influence on the chemical composition of the blood, circulating through the capillary plexuses of the skin, of hot air having a temperature of 160° of Fahrenheit. Not so much its influence on the healthy blood as on the blood of persons in a state of disease.

A member of Mr. Urquhart's family, a child, was accidentally burnt; the burn was distressingly painful; various applications had been made without relief; the child was accustomed to the thermæ, and desired to go into it; it was carried into the thermal chamber, and the pain of the burn was immediately assuaged. Mr. Urquhart, himself, received a severe scald; he betook himself to the thermæ; there, in a heated atmosphere, he directed upon the injured part a blast of air hotter than the temperature of the apartment; the pain became lessened, the process of effusion which results in the production of a blister was arrested; to use a popular expression, "the heat had drawn out the heat."

Looking at the thermæ in a social and political point of view, we find that it is wonderfully adapted for the preservation in health of large bodies of men, combining in itself the respective advantages of air, exercise, and ablution. Adopted by our own army, there cannot be a doubt that it would very considerably reduce the rate of sickness and death, and add to the efficiency of the men. It is applicable also in all cases where numbers of persons are collected together, as in barracks, prisons, poorhouses, factories, and schools; in large business establishments, where a considerable number of young men or young women are assembled; or in places of temporary meeting, as the House of Commons, and

clubs. It must always be borne in mind that the thermæ not only offers advantages as respects physical health, but it also conduces to moral vigour. But the usefulness of the thermæ has even a wider sphere; the Londoner, or the inhabitant of a large city, would live as healthily immured within his city walls as the rustic amidst the fields and meadows of the country. His thermæ would be to him in the place of a country house, of a horse; it would give him air, exercise, freshness, health, and life.

I might add very materially to the long list of conditions to which the thermæ might be applied with advantage, but I limit myself to a single one more: it is that of extensive works, employing a large number of men, either in operations in themselves unsalutary, or in unhealthy localities. The importance of preserving a body of working men in a state of health, and in the best condition for the performance of their duties, must strike every one, and is an object worthy a moderate sacrifice on the part of proprietors or owners. There are many localities in which miasmatic fevers abound, and constantly incapacitate the working force of large operative establishments. I believe that a few pounds expended in thermæ would correct this evil; would put the men into condition to resist the miasmatic force, and to eject the poisonous elements from the blood when they had already found admission into the organism.—*British Med. Jour.*, Oct. 13, 1860.

9. *Thapsia Plaster*.—This is a new therapeutical agent, the active principle of which is derived from the *Thapsia garganica*, an Algerian plant. It is a most energetic revulsive, the effects of which can be graduated by the duration of its application, replacing blisters in serious affections, and rubefacients in the milder ones. It induces an erythema, which is speedily followed by an abundant and salutary miliary eruption. Its action is rapid, more certain than that of croton oil, and its employment is exempt from the numerous inconveniences attributed to some other external agents. It may be employed in any cases in which revulsion is indicated, but it is especially useful in diseases of the chest, rheumatism, and arthritis; it is also serviceable in the affections of children.—*Med. Times and Gaz.*, Nov. 17, from *Gazette des Hôp.*, No. 60.

## MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

10. *Treatment of Delirium Tremens by Large Doses of Digitalis*.—G. M. JONES, Surgeon to the Jersey General Hospital, extols (*Med. Times and Gaz.*, Sept. 29, 1860) the efficacy of large doses of digitalis in the treatment of delirium tremens. "Experience," he says, "has taught him that the best dose is *half an ounce* of the tincture given in a little water. In some few cases, this one dose is enough, but generally a second dose is required four hours after the first. In some cases, but very seldom, a third dose is called for; but this hardly ever need exceed two drachms. The largest quantity I have ever given was *half an ounce* at first, *half an ounce* four hours afterwards, and another *half ounce* six hours after that—making an ounce and a half in ten hours.

"As to the effects of these doses, my impression is that the action is on the brain, not on the heart. The pulse, so far from being lowered in force, becomes fuller, and stronger, and more regular, soon after the first dose. The cold clammy perspirations pass off, and the skin becomes warmer. As soon as the remedy produces its full effect, sleep for five, six, or seven hours commonly follows: sleep is the guide as to the repetition of the dose. No action on the kidneys is evidenced by an unusual secretion of urine. Sometimes the bowels are slightly acted on, but not commonly. I have never once seen any alarming symptom follow the use of these large doses of digitalis. The only case I have lost since adopting this treatment had a tumour in the brain. In three only was other treatment adopted, after digitalis had failed to procure sleep; in other words, in