PART II.

CRITICAL ANALYSIS.

I.

Pathological Researches. Essay I. On Malformations of the Human Heart: Illustrated by numerous Cases, and five Plates, containing fourteen Figures; and preceded by some Observations on the method of improving the Diagnostic Part of Medicine. By J. R. FARRE, M. D. 8vo. pp. 46. Longman and Co. 1814.

DR FARRE is indefatigable in his pursuit of morbid anatomy, and has commenced, by the publication of this Essay, another series of papers, which is upon a much less expensive scale, and is not intended to interfere with his elegant and interesting work on the diseases of the liver, as we learn from the following passage.

“Convinced of the utility of this labour, the author is desirous of adding to the common stock, the observations which he has been enabled to make. Before he undertakes to give those which have presented themselves to him on all the internal organs, he wishes to be permitted to communicate, in particular, what respects the heart, the alimentary canal, and the liver, in separate papers, carried on at the same time, for the convenience of referring to signs and morbid appearances, which have a relation to each other. The first number on the liver has already been published, and the second will shortly appear, the plates for it being finished. Instead of publishing the Diseases of the Heart in a series of numbers, it is proposed to give them in distinct essays. He pledges himself to complete what he has undertaken, as far as his health will permit, or the willingness of the medical public to bear a just proportion of the expense of so considerable an undertaking will justify him in doing; for, in performing his professional duties, he must not forget that he has others of a higher nature to fulfil.” p. ix.

We trust that this just appeal to the profession will be met with equal justice ; for, in that case, we doubt not that we shall be put in possession of the most complete series of the organic changes, which disease produces in the human body, that has ever been accomplished, arranged and illustrated in a manner the best calculated to render it a source of sound instruction. For we are persuaded, that no practitioner has so assiduously pursued the investigation of morbid anatomy with so clear an object, *i. e.* for the sole purpose of connecting morbid changes with symptoms, as Dr Farre, or has obtained a more complete collection of illustrations of these symptoms. We have already, indeed, expressed our opinion, when examining his first essay on the liver, that some modern pathologists are much too sanguine in their expectations of the additional pathological information to be derived from such inquiries : but it is certain, that no practitioner can be too industrious in multiplying his observations, whether of symptoms, or of the seats, causes, and effects, of the maladies which they indicate.

This essay, which contains a statement of, or a reference to, “ nearly all the cases of malformation that have been published,” will be followed by a second, which will treat of Pericarditis and Carditis, and by a third, in which Chronic Carditis will be the subject of illustration.

In what he calls an advertisement, Dr Farre has candidly stated the difficulties which exist in the way of improving the diagnosis of diseases, and the actual imperfection which is observed in that particular point, even in the opinions of the ablest physicians. This difficulty, he admits, arises from the want of uniformity in the signs, which accompany morbid changes, and from the sympathies between distant organs, by which they are reciprocally disturbed by the disorders of each other : whence not only the diseases of the heart and the brain, the centers of the two great systems, the sanguiferous and the nervous, are often confounded ; but still greater errors in diagnosis are committed, even by those who are accounted the best practitioners, in treating some of the diseases of the stomach, the liver, and the heart respectively, for each other. Hence, the author remarks, the physician is often obliged to be satisfied with a conjecture, respecting the seat and nature of the patient's disease.

“ Very commonly, in giving his opinion of the case, he will content himself with saying, that his patient labours under some disease of the liver—some disease of the heart—some disease of the brain, &c. This mode of expression is so familiar, that every medical man continually hears it, nay, often uses it. But if words be the signs of ideas, how loose and imperfect must be the conceptions of diseases,

which, by the very expression, are thus rudely blended and confounded! What other than an empirical method of treatment can be founded on a diagnosis so purely conjectural!" *Advert.* p. v.

If there be any severity in this remark, it consists in its truth. But we fear the very truth implies, not that physicians have, for two thousand years, omitted altogether the right mode of investigation, but that the subject is incapable of demonstration, or of any degree of evidence approaching to it; that the signs and the maladies are not so invariably connected, as always to imply each others' existence; that, on the contrary, some signs that are prominent in one instance, are in others altogether absent, when even the anatomist cannot mark the difference of morbid change; and that above all, the sympathies, to which the author has alluded, mixing with the realities, will at times delude the most cautious observer. All this, however, admitted, we allow to the author, that, every individual, who cultivates morbid anatomy, will obtain the best assistance in removing and overcoming these difficulties; and that the following advantages, which he has pointed out, may be justly ascribed to this species of investigation:

"1st, That this method, preceded by clinical observation, affords the only means" (or at least the best) "of distinguishing between diseases of function and diseases of structure; and the most probable ground for the important opinion respecting the lapse of the former into the latter. 2dly, That it is capable of introducing great simplicity into the methodical arrangement of diseases, nosologists having exceedingly departed from nature in the multiplication of their species, and consequently of their genera." And, "3dly, That by rejecting the artificial forms, and studying only the natural or true species, it enables us to follow, with greater precision, their respective stages, to separate the characteristic from the anomalous signs, which were noted in their histories, and, by thus establishing a more accurate diagnosis, to adapt the treatment not merely to the name, but to the form and stage of the disease." (p. ix.)

The author begins his essay by a short Introduction, in which he exemplifies the value of morbid anatomy, in the information which it has afforded upon this very subject, malformation of the heart. So late as the year 1780, the case of a *blue* girl, in whom the usual symptoms had existed from birth, was described by a French physician, in the *Hist. de la Soc. Roy. de Médecine*, which he deemed a species of *jaundice*; and two similar instances were mentioned by the same author, as having been treated by another physician as cases of *scurvy*. Such mistakes could not now occur.

"Anatomical observation has now, indeed," says Dr Farre,

“ enabled us to distinguish, with sufficient precision, the character which belongs to *ordinary* malformations of the heart. It has shewn us farther how to discriminate between it and an *approximation* to the same character, which occurs under a certain condition of the lungs, a point which we shall consider in its proper place. It has also taught us, that, in particular cases of malformed hearts, although black blood should not be so much in excess as to give the characteristic colour of the skin, the malformation may yet be discerned by the peculiarity of the respiration.” (p. xiv.)

The study of the varieties of malformation, which take place in the human heart, enables us to discover “ several degrees of imperfection in the function of that organ, by which our knowledge of the proper office of the lungs is improved;” it also contributes to throw some light upon the sources of animal temperature. A double heart is essential to the perfection of all warm-blooded animals, in which the whole mass of blood must pass through the lungs, before it is distributed to the other parts of the body. And Dr Farre remarks, that all the imperfections of configuration, to which the structure of such an organ is liable, are productive only of two errors in its functions, (varying in degree according to the extent of malformation); namely, 1. The mingling of black with red blood; and 2. impeding the circulation. This general fact Dr Farre has made out, and adopts it as the ground of classification. He arranges, therefore, all the varieties of malformation that have been recorded, under two species, distinguished by these two imperfections of function. Possibly the following tabular view, which the author has given as a table of contents, may afford the reader the most satisfactory idea of the varieties, which he has described and figured:

Species I. Malformations of the Heart, or of its Arteries, mingling black with red blood.

Sp. I. var. 1. Single Heart.

- I. — 1. a. Two Pulmonary branches from the Aorta.
- I. — 1. b. One Pulmonary branch from the Aorta.
- I. — 1. c. Heart transposed. The Aorta and Pulmonary Artery branching from a common trunk.
- I. — 2. Imperfect Double Heart.
- I. — 2. a. Unclosed Foramen Ovale.
- I. — 2. b. Dilated Foramen Ovale, or imperfect Septum Auricularum.
- I. — 2. c. Dilated Foramen Ovale, with an open Ductus Arteriosus.
- I. — 2. d. Ostium Arteriæ Pulmonalis communicating with both Ventricles.

Sp. I. var. 2. e. Dilated Foramen Ovale, and contracted Ostium Arteriæ Pulmonalis.

— I. — *2. f.* Dilated Foramen Ovale, with an open Ductus Arteriosus, and impervious Ostium Arteriæ Pulmonalis.

— I. — *2. g.* Perforation of the Septum Ventriculorum.

— I. — *2. h.* Ostium Aortæ communicating with both Ventricles.

— I. — *2. i.* Transposition of the Aorta and Pulmonary Artery.

For the particulars, both of the appearances of the heart and great vessels, and of the symptoms, which were observed during life, we can only refer the reader to the work itself, and to the well executed figures accompanying it. All that we can attempt in analyzing a work, which contains so much detail, is to notice some of the leading observations of the author as we pass on. For though the whole lies in the compass of but forty-six pages, the words might well have been dilated into a volume of 150 pages, in the ordinary mode of printing, and the matter into one of twice that bulk.

In speaking of the unclosed foramen ovale, Dr Farre remarks upon the frequency of such an appearance in the dissection of adult persons, in whom, however, no particular inconvenience appears to arise from it; a circumstance which he thus explains. "In these simple cases the communication is so oblique, that the valvular office must by this very arrangement be still performed, if not perfectly, at least so well as to prevent any perceptible disorder of the vital functions." p. 8. Dr Farre thinks the opinion of the late Mr Allan Burns, that such a state of the heart in old people is accompanied by dyspnœa, is not well founded; and justly expresses his surprise, that the celebrated M. Corvisart should mention two instances of the open state of this foramen, which he had met with, as rare phenomena. If the septum auricularum is imperfect (as in I. 2. *b*) occasional dyspnœa, and more or less permanent blueness of the skin, occur. But if, with a dilated foramen, there is combined an open ductus arteriosus, the vital functions are disturbed in proportion to their extent; blueness, dyspnœa, palpitation, faintness on exertion, obscureness of pulse, &c. occurring in various degrees, as in several cases here quoted and detailed. The variety I. 2. *f* is more frequent than those which precede it in the table; but the variety I. 2. *h*. which was first described by Sandifort, is, Dr Farre affirms, by much the most frequent, and is pretty constantly combined with one or other of the preceding varieties, many examples of it having been recently recorded and observed.

Having concluded his detail of illustrations, Dr Farre proceeds to the ratio symptomatum. The permanent blue colour of the skin affords a sign that a very large proportion of black mingles with the red blood: but malformation may exist, where this hue is not present. Exceptions to this hue are mentioned in I. 1. *a.* and *c.*, and in I. 2. *d.* From these exceptions, the author remarks,

“ We learn, that if the *full* proportion of blood be circulated through the lungs, although the red blood be subsequently mixed with an equal proportion of black blood in the heart, yet a black colour will not be imparted to the skin. The blue colour is more or less intense, and permanent, according as the capillary vessels of the skin are more or less completely filled, but chiefly in proportion as the circulation is retarded through the lungs. The explanation of the other symptoms, the irregularities in the respiration, and in the arterial action, as well as the various affections of the brain, connected with over-distention or an imperfect supply of red blood, is sufficiently obvious.”

With respect to the temperature of the body, Dr Farre considers an accurate comparative measurement of the *internal* and *external* heat, in these cases, as a desideratum; as well as a knowledge of the quantity of carbonic acid formed by respiration. From two cases, which he relates, it appears probable that the *internal* heat is higher, in these subjects, than in those who have perfect hearts, whilst the cutaneous temperature is contingent on external circumstances. Whence the author is led to the following reflections.

“ A still greater difficulty, however, presents itself with respect to the temperature of this boy; for the stream of blood, which fed the pulmonary artery, being in this case so very small, how could a sufficient quantity of caloric, in its specific form, be combined with it; to preserve a sensible temperature of at least one hundred degrees on the internal surfaces of his body. There seems to be a sufficient evidence that the function of respiration is a source of animal heat. But I am free to confess my opinion, that it is not its only source. Priestley's celebrated experiment proved, that black blood could be converted into red blood, without the actual contact of the air, or the structure of lungs. In like manner, although the lungs may be best adapted to perfect the changes which produce animal heat, it is sufficiently probable that this important operation does not exclusively belong to them.

“ The fact that this boy's internal temperature amounted to one hundred degrees, is in confirmation of the opinion that black differs in its capacity for heat from red blood; but if the former, on the internal surfaces, be capable of taking on a higher temperature, by two degrees, than the latter, it is also certain, that, on the external, it

is much more easily deprived of its heat, by the various circumstances which favour the reduction of animal temperature. So that, the latter, being able to retain its temperature longer than the former, must hold in combination an extra proportion of caloric.

“ I have already attempted to reconcile the contradictory evidence respecting the symptom of coldness of the skin, by proving that its manifestation bears some proportion to the diminution of the pulmonary circulation. The last observation shews farther, that the coldness is regulated by external circumstances:—that, under those which favour the accumulation of animal heat, the thermometer at the skin rises as high, in such a subject, as in one of perfect structure; but that the heat is more slowly accumulated, and, under contrary circumstances, more rapidly expended. From this view we perceive, that a hasty observer, guided only by his sense of touch, on feeling the skin of a blue child, when *exposed*, would report it to be colder than natural; whilst another, making his observation on a similar subject, *well covered* and favourably situated for the accumulation of heat, would report the temperature of his skin to be as warm as natural.” p. 41.

Of the second species, or, “ malformations of the heart, or its arteries, *only* impeding the circulation of the blood,” Dr Farre mentions but two varieties; and the first of these (II. *a*. “ Left ostium ventriculi contracted, and mitral valve rigid,”) is stated on the authority of the late Mr Allan Burns, till farther evidence shall decide, whether it be properly placed among the malformations, or whether it be not the result of disease; since chronic inflammation may produce such a change. The second variety, *b*. is that, in which the “ ostium aortæ is narrowed by having two instead of three semilunar valves,” and is very rare. Dr Baillie has described and figured it, and the author has here described and delineated another specimen.

In his concluding observations, Dr Farre admits that physiology is more likely to be advanced by the investigation of these malformations of the heart than pathology; but observes that the task of soothing and mitigating, as well as avoiding to inflict unnecessary pain, is a part of the physician's duty. There are two sources of distress from which these patients suffer; namely, in proportion to the diminished quantity of red blood which enters the general circulation, and to the mechanical impediment to the transmission of the blood, or to both conjoined. Referring the consideration of the latter to the subsequent essays, he proposes some inquiries as to the means of alleviating the former. The skin he believes to be in some measure a compensatory organ, by which the impeded function of respiration may be partially relieved; and from the palpable benefits derived from the warm bath, in the most severe paroxysms which

the subjects of these malformations suffer, he deems it probable that their comfort may be promoted by living in a regulated atmosphere, and keeping the skin in that warm and moist state, in which it may in some degree compensate for the imperfect function of respiration. Something, he suggests, may also be done occasionally by modifying the position of the patient, to favour the influx of red blood into the aortic system. In this, however, the patient will commonly "minister to himself;" for the easiest posture in each case can only be learned from experience. The distress of these unhappy patients, may be likewise mitigated by regulating the kind and quantity of food, and the state of the bowels, by the mildest remedies.

It will be obvious, that our author has taken a very comprehensive, and at the same time a very detailed view of his subject, and has left nothing to be added, except what future investigation may bring forth. Considering the numerous illustrations by engravings, the price of this work appears to us below the ordinary average.

II.

Part First. An Essay on the Venereal Diseases, which have been confounded with Syphilis, and the Symptoms which exclusively arise from that Poison. Illustrated by Drawings of the Cutaneous Eruptions of true Syphilis, and the resembling Diseases. By RICHARD CARMICHAEL, M. R. I. A. President of the Royal College of Surgeons in Ireland, and one of the Surgeons of the Lock Hospital, Dublin. 4to. pp. 121. Longman and Co. London, 1814.

IN the midst of the perplexity and obscurity which prevail in the history of the diseases, which resemble syphilis, and under the difficulty which every practitioner must feel in establishing any satisfactory principle of diagnosis between them, an essay, emanating from such authority as the president of the Irish College of Surgeons, and a superintendent of the great Lock Hospital of Dublin, will necessarily attract the attention of every one who is zealous for professional improvement. We hastened to the perusal with considerable anticipations of deriving important instructions from such a teacher;—for we acknowledge our—