Inaugural dissertation on pericarditis : submitted to the Medical Faculty of the University of Edinburgh ... / by William Wells.

INAUGURAL DISSERTATION

ON

PERICARDITIS;

SUBMITTED TO THE MEDICAL FACULTY

OF THE

University of Edinburgh,

ON THE OCCASION OF OBTAINING THE DEGREE OF

DOCTOR IN MEDICINE,

BY AUTHORITY OF

THE VERY REV. PRINCIPAL BAIRD,

AND WITH THE SANCTION OF

THE SENATUS ACADEMICUS.

BY

WILLIAM WELLS, M. R. C. S. L.,

MEMBER OF THE ROYAL MEDICAL SOCIETY OF EDINBURGH.

Ars medica est tota in observationibus.

EDINBURGH:

J. JOHNSTONE, PRINTER, 104, HIGH STREET.

MDCCCXXXV.

To
Dr. Baigie with the
respectful compliments
of the Author.

TO

JOHN WOOTTEN, ESQUIRE, M. D.,

OF BALIOL COLLEGE, OXON.,

DISTINGUISHED EQUALLY

BY HIS SCHOLASTIC AND PROFESSIONAL ATTAINMENTS,

HIS KINDNESS OF DISPOSITION, AND

URBANITY OF MANNERS,

THIS ESSAY IS DEDICATED BY

THE AUTHOR,

AS A PROOF THAT THE FRIENDLY INTERCOURSE OF EARLIER DAYS

HAS NOT BEEN FORGOTTEN.

TO

CLAUDIUS TARRAL, ESQUIRE,

LATE SURGEON-MAJOR OF THE POLISH ARMY,

This Token of Sincere Admiration

OF HIS HIGH PROFESSIONAL QUALIFICATIONS, AND OF THE

WARMEST RECOLLECTION OF HIS FRIENDSHIP,

IS INSCRIBED BY

THE AUTHOR.

DISSERTATION

ON

PERICARDITIS.

In these times of universal research, when the minds of all men seem bent on the accumulation of individual facts, with a view to the ultimate establishment of some great principle of truth, the regions of science are not so often illuminated by some dazzling discovery, as its stores are enriched by the acquisition of some new fact, which, perhaps insignificant when considered by itself, is of the highest value, as connecting the links of a previously imperfect chain, and so giving unity to the whole. What is true regarding scientific enquiries in general is remarkably so with respect to establishing a Diagnosis in Medicine.

There are many diseases which at different times, and under different circumstances, present to the observer a variety of features, not one of which by itself, and frequently not even the whole viewed

together, prove sufficient to characterise the disease, and to declare its nature to the practitioner, who is in such circumstances compelled to trust to a judgment resting on mere probability, and with Celsus to lament, "Medicinam esse artem conjecturalem," while perhaps the discovery of a single additional indication would be sufficient to unite the disjointed evidence, and change conjecture into certainty.

Before the brilliant and invaluable discovery of Auscultation, and the more general and accurate application of Percussion, no disease could have more frequently escaped detection than Pericarditis, nor could any other have been oftener the subject of erroneous conclusions. The observations of such men as Corvisart, Laennec, Andral, and others, have shewn that this disease not only exists accompanied by the symptoms of general disturbance and local derangement, which might be expected from the presence of an acute inflammatory affection, but not unfrequently occurs without exhibiting features in any degree marked or localized, and gives rise to symptoms at a distance from the seat and source of the evil; nay, more, that all the more obvious indications of a general and topical character which, *a priori*, would seem to point out the existence of this affection, may occur, where, from the appearances after death, we have not the slightest reason to believe that the pericardium had been, at any period of the disease, the seat of mischief. What, then, must have been the uncertainty

and embarrassment of the physician when he had no guide in forming a Diagnosis, but the ordinary and fallacious symptoms of this malady; what his confusion to find, by examination after death, that it had existed in a degree sufficient to destroy his patient, without his having once suspected the presence of the insidious enemy; how great his regret on seeing clearly pointed out the course he might have advantageously pursued, discovered only when too late; and how great the obligations of medical science to that inestimable instrument, which, with the aid of Percussion, by conveying to the ear physical intimation of the existence of morbid states, has revealed the nature, position, and extent of so many diseases in our most important and vital organs! Nor yet should this commendation of the Stethoscope be understood as if the indications it affords were the only ones worthy of attention. No symptom, however slight and apparently insignificant, will be overlooked by the truly scientific observer; nor even by the Stethoscope are we always furnished with indications individually conclusive, so that, as we shall in the present disease perceive, it is only by carefully accumulating all the evidence, and by adverting to the negative or exclusive, as well as to the positive testimony so presented, that the true nature of the disease can be ascertained.

The general history of a disease is now usually commenced with the description of the morbid alterations of structure to which it gives rise, as

it is from an acquaintance with these only that we can derive a knowledge of the symptoms exhibited during life, which are really the effects of these organic changes.

Pericarditis can assume the chronic as well as the acute form, but as I intend to advert principally to the latter I shall be more particular in describing its anatomical characters, giving only a faint outline of those of the former. In doing this I must necessarily avail myself of the various elaborate works written on this subject, especially of the French School; and to information I have had the good fortune to obtain from the invaluable Lectures of Professor Thomson, of this University, accompanied and illustrated as they are by his unrivalled collection of pathological drawings.

The Anatomical characters of Acute Pericarditis do not differ, excepting in a few peculiarities presently to be noticed, from those of the inflammations of other serous membranes. These are said to be redness and vascularity, more or less marked, of their internal secreting surface,—deposition of coagulable lymph, and effusion of serum.

Each of these will be considered separately.

I. The redness of the Pericardium consequent on an attack of acute inflammation is described by authors, as being not very intense, and much less so than when the disease has been of a chronic character; and we have the authority of Laennec for stating, that some cases have existed, in which,

from the thickness of the false membranes, the inflammation must have been exceedingly violent, where however no preternatural redness was discoverable on the removal of these membranes; a circumstance which may be attributable rather to the disappearance of vascularity, than to its never having existed; an analogy to which, might be quoted from the disappearance of redness in the bodies of those who have died of Erysipelas. M. Scoutetten however affirms, from some experiments made on living animals, that an inflammation of an internal membrane, will in every case leave increased redness after death.* When it does exist, it is usually confined to certain parts of the membrane, the surface of which, in these particular situations, presents small red points, as though dotted with blood, more or less numerous and grouped together; in some instances however a more uniform vascularity has appeared, but rarely, if ever accompanied with thickening of the Pericardium itself.

II. The next more striking and marked effect of the disease claiming our attention, is the deposition of coagulable lymph; which presents several peculiar appearances, and is almost invariably accompanied by the effusion of a greater or smaller quantity of serum. This deposition of lymph may be either partial or general; but as the whole surface of the membrane is most frequently involved

* Archives Generales, tom. iii. p. 501.

in the disease, so we find this deposition in the majority of instances proportionally extensive, not being by any means confined to the free surface of the Pericardium, but frequently extending over that portion investing the heart and origins of the large blood-vessels.* In Pericarditis the effused lymph rarely exhibits that smoothness and uniformity of surface generally observed in pleuritic exudations, but is indented with numerous inequalities, which, corresponding pretty nearly with each other in extent, give the whole surface a remarkably uneven and as it were a cellular appearance.

For the most part the false membranes so formed, are of denser consistence than in Pleurisy, are thicker in substance, possess more elasticity, and adhere more closely to the membrane from which they have exuded; but there have been some cases where the coagulable deposit was so intermingled with, and as it were dissolved in, the accompanying serum, that a mixture, not unlike Pus, was the result, the colour of which indeed these false membranes generally exhibit. Though the deposition of lymph is stated by all authors whose works I have consulted, to be an invariable result of Pericarditis, yet, in the course of last winter, two instances occurred, the one under the

* Dr Abercrombie mentions an instance, in which the deposition of lymph was not merely confined to the cavity of the pericardium, but was also found on the outer surface of this membrane, and in some places half an inch in thickness.—Transactions of the Medico-Chirurgical Society of Edinburgh, vol. i. p. 3.

observation of a friend, the other under my own, of children labouring under Measles, abruptly terminating in fatal Pericarditis, which appear to be exceptions to this general remark. In neither of these two cases did the Pericardium exhibit the ordinary vascularity and coagulable deposit, but on the other hand, it was greatly distended by a copious effusion of serum merely, and the heart itself, in both cases, was found in its natural state. M. Andral having found exactly similar appearances in an individual of 20 years of age, seems to hesitate in deciding whether they are to be considered as the effects of an "active exhalation," or of an inflammation properly so called, but considering that these may be only different forms of the same primitive affection, he evidently inclines to the latter opinion.*

III. Effusion of serum may be considered as invariably an attendant on this affection, for even in those rare cases, where none has been found after death, there is reason to believe that it had been rapidly absorbed. In the majority of cases, the quantity is considerable from the earliest periods of the disease, but may be more or less diminished by absorption on the subsidence of the inflammation. It most frequently exceeds the quantity of lymph thrown out, though Laennec states the contrary, for out of thirty-five cases quoted by Louis, in three only was the serous effusion but

* Clinique Medicale, Maladies de la Poitrine, tom. i. p. 29.

slight, in the remaining thirty two, the quantity was very considerable, and consequently the amount of lymph proportionably small. In one of these the quantity amounted to four pounds, in none was it less than eight ounces. * Still there are cases in which the quantity of lymph exceeds that of serum, and this perhaps holds more particularly true in respect to Rheumatic Pericarditis. † In the early stages of the disease, the serum is more or less transparent and of a pale straw colour; in this respect however it varies much, for as the disease advances, it becomes more turbid, being mixed with albuminous flakes, and assuming more or less a purulent character. In some instances, Pericarditis, like Pleurisy, is hemorrhagic, in which cases the surface of the false membranes presents a red hue more or less vivid. Dr Latham has ingeniously conjectured, that this is attributable to an inflammatory action continued or resuscitated in the newly organized coagulable lymph, which from its tenderness, is very apt to pour out blood upon any considerable excitement. ‡

Professor Thomson related a case, where he found in the pericardium of a young girl, instead of serum, a large quantity of blood. She had never

* Memoires Anatomico-Pathologiques sur Diverses Maladies, p. 281.

† See cases related by Dr Stokes, Dublin Journal, September 1833, vol. iv. No. 10.

‡ London Medical Gazette, vol. iii. p. 7.

menstruated; and he believes it to have been a vicarious discharge. It had not all the physical characters of blood, but rather resembled that matter which is found in the uterus and vagina, in cases of imperforate hymen.

In the earlier stages of the disease, adhesions sometimes exist between the opposite surfaces of the effused lymph, by means of slender bands or threads, traversing the effused serum, as is often observed in Pleuritis; while in this state, they are yet delicate, and easily lacerated, but, as the disease advances, and the serum is gradually absorbed, these adventitious connections become closer and more dense, less easily separable, and gradually acquire more of the character of cellular tissue. The resulting adhesions may be either partial or general, loose or intimate, varying according to the extent and severity of the inflammatory attack; and further modified by the *kind* of inflammation, and properties of the effused lymph itself; and lastly, by a variety of other causes, the agency of which we are at present unable to explain; hence it is difficult to account for the presence of these adhesions in some cases, and their absence in others; neither can the cause of such anomalous occurrences, be always referred to the existence of the effused fluid, because, as Dr Elliotson observes, "*first*, we often see one portion of lymph adherent, while another, by its side, is not; and, *secondly*, there is often a total absence of adhesion, without

sufficient serous effusion to account for it."* Several cases of this nature are related by Doctors Stokes and Abercrombie, in which was found very extensive deposition of lymph over the whole inner surface of the pericardium, unaccompanied by any serous effusion; in none of the cases, however, were any adhesions to be discovered.

The anatomical characters of the chronic form of Pericarditis are found to differ from those of the acute, rather in degree than in kind. The redness is at once deeper, and more uniformly diffused, generally occupying the whole serous surface. The fluid effusion is more abundant, sometimes to such an extent, as, by its pressure, to cause atrophy of the heart itself, and to give it an appearance as if it had been macerated; it is in general much less transparent, varying from a milky to a purulent hue and consistence, and to the dark sanguineous appearance above described in speaking of the acute disease. Laennec describes the coagulable effusion in the chronic form, as rarely occurring, and when it does, as being thin, soft, and friable, and closely resembling a layer of pus, more than ordinarily concrete; and to this form, rather than to the acute, he is inclined to attribute those general and intimate adhesions which are occasionally observed upon the dead body; and to the acute, the partial and filiform;† in the former of these views, he is

* Elliotson.

† De l'Auscult. Med., tom. iii. p. 258.

not supported either by the experience of other authors, or by analogy;* and this perhaps may be owing to his having considered, that as a consequence of a form of the disease, subacute from the beginning, which others believe to be a result of the transition from the acute to the chronic form. But it is not merely into cellular tissue that the false membranes may be converted. In the chronic stages, we may meet with these membranes degenerated into fibrous, fibro-cartilaginous, cartilaginous, and even osseous structure. M. Louis, in his Memoir, relates two remarkable cases of the last-mentioned species of transformation;† and, lastly, they may be converted into muscular fibre. M. Wolff, in a Treatise published at Heidelberg, has described, with accompanying delineations, several instances of this extraordinary conversion of the false membranes both of the pericardium and pleura.

Sometimes there is nothing else found than several thin, bluish, milky-looking spots, of various size, on the surface of the heart, but easily detached from it, leaving the investing layer of the pericardium entire; they have however been found between this membrane and the substance of the heart itself.

Their origin is supposed to depend on an inflam-

* Hope, Cyclop. of Practical Med.; Art. Pericard. and Carditis, p. 282.

† Recherches Anatom.—Patholog.

mation occurring simultaneously in several insulated spots. Tubercular degenerations also have been found in the substance of the coagulable deposits; but as the same appearances were found at the same time in other organs of the body, along with the general tubercular diathesis, it seems reasonable to consider them rather as contingent to, than necessarily consequent on, the disease of which we are treating. Dr Thomson exhibits to his Class a beautiful delineation of this tubercular deposit, by which the pericardium is glued to the heart, and externally covered by numerous enlarged bronchial glands, filled with caseous matter. As Carditis is not unfrequently complicated with Pericarditis, it may not be improper here to mention some of the appearances which the heart presents under such circumstances, without entering on the still doubtful question regarding the priority of either affection. The alterations usually described, as referable to an inflammatory state of the muscular tissue of the heart itself, are, *First*, Preternatural redness or paleness of that tissue, while at the same time its substance may be unchanged, or morbidly softened or indurated; of these two morbid states, the first is by far the most frequent. Dr Elliotson states, that he has always found an effusion of sanguineous serum to accompany ramillisement of the heart. Mr Stanley mentions a case of Pericarditis, where besides the ordinary vestiges of inflammation in the pericardium, the heart was almost black with congested blood, very

soft, and studded with little collections of dark pus, the only indication which Laennec considers as decidedly characteristic of inflammation in muscular tissue. In some cases, the effects of inflammation have been found in the interior of the heart, consisting of deposition of coagulable lymph, thickening of the valves, with fleshy growths or vegetations adhering to their loose edges; and they are sometimes seen projecting from the inner side of the auricle or ventricle, more particularly of the left. In the chronic form of this disease, when, in consequence of extensive adhesion of the pericardium, the heart becomes enlarged; this enlargement may be partial or general, but more frequently it is confined to the cavity of the left ventricle, with or without thickening of its parietes.

Signs of Acute Pericarditis.

In looking through the many and highly esteemed works, both of this and other countries, in which the history of this affection has been detailed and studied with all the care and attention it demanded, but one impression can result from the research,—that, of all the diseases to which mankind has become liable, there is not one whose approach is more insidious, whose character is less fixed, and symptoms more variable; and lastly, whose existence has been more difficult of detection to the most skilful observer.

Since, however, the brilliant discovery of Auscultation, and the more general and practical use of Percussion, the former so successfully applied in this affection by Dr Stokes of Dublin, the latter by M. Louis, whose labours have thrown so much light on the most essential points in the Diagnosis, it must be acknowledged, that the amount of difficulties formerly existing has been greatly lessened, and many of the most embarrassing circumstances in a great measure removed. It now only remains that a more familiar acquaintance with the means suggested by these eminent men should be cultivated, that the subject may be stripped of all its intricacies. Before proceeding to the description of the symptoms, it may be here proper to remark, that the most frequent and dangerous form of this disease occurs in connection with Rheumatism, it may however supervene upon any other febrile affection, particularly the Exanthemata as Small Pox, Scarlatina, Erysipelas, and Measles. Of the last species of Metastasis occurring in children, three cases have come under my own observation during last winter, two of which are of sufficient interest to deserve further notice, as in both, the disease presented many striking and important peculiarities. The last and most rare variety is the Idiopathic, where it comes on without any previous affection; with this I shall commence, noticing the other forms under separate heads.

Of Idiopathic Pericarditis.—Though, as before

mentioned, this is comparatively a rare form of the disease, numerous examples are recorded both by the English and French authors, and some months past I had myself an opportunity of witnessing two cases; the patients were adult females, both ended in recovery. This form of the affection may either be developed openly with a numerous group of well marked symptoms, or, as is more frequent with the other varieties, creep on in a latent state, with scarcely one of its characteristic features; on the whole however we may anticipate less of the ordinary difficulties to contend with, than where the affection occurs under different circumstances, in connection with Rheumatism, or a previous morbid condition of the system, when its characters are so frequently obscure, and its results fatal. The approach of this form of the disease is not often attended by previous signs, as in Pleurisy, or much general indisposition, though this is sometimes the case; its attack is usually sudden, and the first symptoms generally complained of are pain, with more or less difficulty and oppression of breathing, they may occur at the same moment, and proceed together, or one may precede the other; in general they bear a tolerably strict mutual relation; the pain varies much in its permanency, seat, and degree, it may have its seat in any part of the chest, but more frequently it is confined to the precordial region, radiating from this point below to the base of the sternum, and above to the

left shoulder and arm, extending down the front as far as the elbow, but rarely, as remarked by Dr Hope, descending below this point. In some severe cases, as in the one, for example, related by Andral,* where the affection was connected with Rheumatism, the pain was excruciating and permanent throughout the whole course of the disease; another instance is related by Dr Abercrombie, where it was equally severe,† and lasted for nearly a fortnight, with scarcely any abatement; these are rare instances, and we are not often to expect to find it with such characters of permanency and violence; more frequently the pain is intermittent, occurring only by longer or shorter paroxysms at uncertain intervals; and with it is often combined a sense of painful constriction of the chest, with a feeling of internal heat, in or near the precordial region, which is generally painful on pressure, more particularly in the intervals of the cartilages of the fourth, fifth, and sixth ribs,—the same is felt at the epigastrium. A few cases are recorded where the pain has been altogether absent, an example of which I have myself seen; instead of pain there sometimes prevails a general soreness of the left side, or a peculiar feeling of numbness; one remarkable instance of this kind is mentioned by Andral, in which the sensation seems not to have been unlike that experienced

* Clinique Medical, tome i, Maladies de la Poitrine.

† Med. Chirurg. Trans. Edin., vol. i.

in Angina Pectoris. To these signs must be added palpitations which are also manifested in the early part of the disease, and in some cases forming the most prominent and distressing symptom; in others, occurring only in a slight degree at stated intervals, particularly during the night, when the patient is often harassed by frightful and alarming dreams. These palpitations are observed to be often excited by the slightest causes, at this period the heart will be found to beat with unusual violence; its impulse is often propagated over a large extent of the anterior parietes of the chest, and in some cases its action is increased to such an inordinate degree, as even to be visible to bystanders; but these phenomena occur chiefly in those instances in which the structure of the heart itself is implicated in the disease. In others, again, the action of the heart is disturbed only at intervals, presenting a succession of beats irregular both as to force and rythm, while in many it is feeble, fluttering and altogether obscure. The conditions of the pulse may easily be inferred from the preceding statement, as it will necessarily exhibit the same numerous and capricious variations. Dr Hope describes it as "always frequent, and generally at the onset full, hard, and jerking, and often with a thrill. Sometimes it maintains these characters throughout, but more commonly it becomes, after a few days, weaker than accords with the strength of the heart's action, and in the worst cases, small, feeble, and inter-

mittent, irregular and unequal."* This feebleness of the pulse, while the impulse of the heart is of more than ordinary strength, has sometimes been present from the commencement of the disease. In three out of four cases mentioned by M. Louis, irregularity of the pulse prevailed from the beginning, in the fourth it supervened within the last forty-eight hours of life; while it existed in only one of six cases detailed by Dr Stokes. The most remarkable character of the pulse in those instances which I have had an opportunity of observing, was its extreme excitability, and its great susceptibility of innumerable changes from the operation of slight causes, and I have further remarked the pulsations at the two wrists not to correspond with each other.

More or less febrile excitement will be found to accompany the above-mentioned symptoms; there will be hot skin, and often much sweating, great thirst, headache, sometimes severe, with delirium; in some cases very violent nausea, with occasional vomiting of *bilious* matter, and other *marks of gastric irritation*, and with the hurried respiration there is often a dry cough. The face is usually flushed, and in one case I remember having seen the redness, though general, more intense and permanent on the left than on the right cheek; an *appearance* noticed by Corvisart, but which Laennec states that he had never observed. In

* Cyclop. of Practical Med.—Artic. 'Pericarditis,' p. 283.

addition to this flushing, particularly in the metastatic forms of the disease, the features undergo a very remarkable change, and bear an expression of the greatest anxiety and alarm; there is at the same time great prostration of strength, with feelings of sinking, amounting occasionally to actual syncope—*it has been excited by mere pressure at the apex of the heart.* The position of the patient is important, as varying with the seat and degree of pain, and not unfrequently indicating the extent to which the general powers of the system are subdued by the vehemence of the disease. Generally speaking, the patient prefers lying on the back, with the head and shoulders elevated, and the former rather inclined forwards; *he seldom lies on the side,* and is not unfrequently compelled to maintain the erect posture, by the dread of impending suffocation. In some cases, the patients are affected by continued restlessness and agitation. Dr Abercromby mentions a case of a female who suddenly fell into a state resembling Chorea, with convulsive agitation of the limbs, constant motion of the head, and wild rolling of the eyes, and delirium to such a degree that for several days the patient was with difficulty kept in bed.* Such is an analysis of the symptoms ascribed to the early stages of this affection, in the acute form, which, if permitted to follow its course unchecked, may soon arrive at a fatal termination. Either life

* Transact. of Med. Chir. Society, Edin. vol. i.

is unexpectedly cut short in a fit of syncope,—an instance of which I have myself known,—or, what is more usual, there is an aggravation of all the symptoms. The respiration becomes more accelerated and embarrassed, at the same time the pain abates, or is entirely absent; the pulse grows more feeble and irregular, and sometimes scarcely perceptible; the countenance from being anxious becomes hippocratic; the face is livid and swollen, and not unfrequently the head and neck are ædematous; the extremities grow cold, and death occurs either by asphyxia, or by coma, after the supervention of subsultus tendinum, and delirium. Though there are numerous examples of the disease terminating in the modes above-mentioned, yet it is not the most common, as I believe we have more instances of its passing into the chronic form, and of life being protracted to an indefinite period. M. Louis, in his Memoir, states, on this point, that the symptoms speedily loose their intensity, and that in general death does not occur until from the 24th to the 80th day, or thereabouts.

Having thus completed a sketch of the more ordinary, yet diversified and uncertain symptoms developed during the progress of this affection, it is with more satisfaction that we turn to the consideration of the physical signs connected with it, as experience has proved that they will be found to exist more or less, separately or conjoined, under every variety of form, acute or chronic,

which this disease may assume. These signs are derived from two sources, Percussion and the use of the Stethoscope; the merits of the former of which, I think, have been too slightly noticed by some of our modern authors, considering that its application has been so clearly illustrated and confirmed by the very able researches of M. Louis.* On applying Percussion, then, we may often expect to find more or less dulness of the precordial region, probably more marked at the inferior part, and, according to M. Louis, in many instances accompanied with some prominence of the chest over this space. One example of this prominence I observed in a child who died of Pericarditis; a phenomenon which we should *a priori* expect to be more frequently observable in young subjects, in whom the elastic parietes of the thorax would more readily, and to a greater extent, yield to a distending force. In two instances, however, I have known it to exist in connection with Hypertrophy of the Heart; one was a patient in the Royal Infirmary here, the other was under the charge of M. Bouillord, at the Hôpital de la Charitè, who pointed out the circumstance; nor yet do I consider the importance of this sign as invalidated by such causes, its value depending only on its co-existence with other indications.

* In percussing the chest, a solid piece of Indian-rubber about an inch square, and rather more than the fourth of an inch in thickness, forms the best plessimeter, as by it the character of the sound is better conveyed than by any other.

The next, and we may say the more satisfactory signs, are those furnished by the Stethoscope. First, then, the ventricular contractions are described as giving a strong impulse, and sometimes a *bruit* more marked than in the natural condition, at intervals the pulsations become more feeble and shorter than usual, and irregular, which correspond with the intermittance of the pulse. The *bruit de soufflet* has been much insisted on by Dr Latham as an indication of at least the Rheumatic form of Pericarditis, and Dr Hope represents this phenomenon as existing equally in every form of the disease; but this sign, I fear, we must consider as equivocal, if not absolutely fallacious; for though unquestionably conditions of the circulating organs, and relations between them and the circulated fluid exist in Pericarditis, such as would under other circumstances, as in the case of nervous excitement, produce the *bruit* in question, yet, as it occurs from so many other causes, temporary or permanent, functional or organic, we cannot believe that its presence is decisive of the existence of the disease we are treating of. The statements regarding the constant presence of the *bruit de soufflet* may perhaps be in some degree accounted for by its having been occasionally confounded with the *bruit de cuire neuf*, or *frottement*, a sound first observed by Laennec, but abandoned by him as an indication of the disease, and neglected till it was revived by the observations of M. M. Collin et Devillier. That

this *frottement* has been mistaken for the *bruit de soufflet* seems the more probable from no notice at all having been taken of the former by any British authors excepting Dr Stokes, who has amply confirmed its existence and intrinsic value as a direct sign of Pericarditis. It was Laennec who first compared this *bruit* to the creaking of new leather, and gave, as an example, the familiar sound of a new saddle when first made use of, without referring it to its cause, for the discovery of which we are indebted to Collin, who first observed it in Pericarditis, and attributed it to the serous surfaces having lost their natural smoothness and lubrication, so that the friction produced by the roughened surfaces on each other became perceptible to the ear, and as Dr Stokes has further noticed, communicated vibrations to the hand.

From many well marked cases, Dr Stokes has been enabled to establish several modifications of this phenomenon, varying according to the state of the effused lymph, its extent, the existence or non-existence of fluid, the advance or arrest of the process of organization, the process of the obliteration of the cavity, and the repetitions of the inflammation, each of these conditions being accompanied by the presence or absence of corresponding signs; and occasionally most or all of them occurring in a manner successively in the progress of the same case. The first of these modifications, described as accompanying a great degree of

roughening, is a rasping sound, very similar to that produced in the worst cases of ossification of the valves. The second is the *bruit de cuire neuf*, as originally described by Collin. Next we have the sound resembling the *frottement* of Pleurisy, and only modified by the action of the heart. Further, it occurs with a character between that of *bruit de rape* and *bruit de soufflet*, or may completely resemble the latter phenomenon. Lastly, there may be a slight friction sound, perceptible only at the very commencement and at the termination of each diastole and systole of the heart; and it may be here proper to add, for the *full* and *clear* developement of these anormal sounds, the natural resonance by Percussion of the precordial region is a necessary condition. Another sign, which I do not remember to have seen noticed except by M. Louis, is the absence of the respiratory murmur over the precordial space, depending on the bag of the pericardium being in a certain degree distended by effusion, and so displaying the lungs in that situation, which in the healthy present their natural murmur in this as well as in other parts of the chest. This indication will of course be applicable to the disease of which we are speaking, only when there are no signs of such a degree of pulmonary affection as might of itself account for the absence of the vesicular expansion in that spot. In a case which fell under my own observation I had an opportunity of verifying the existence of this *phenomenon*.

Causes.

When Pericarditis occurs idiopathically, and as a distinct affection, its causes are those of inflammation in general attacking similar structures, such as cold, checked perspiration, febrile excitement, immoderate exercise, exciting or depressing passions, and abuse of spirituous liquors, &c. Far more frequently the disease occurs, as depending on mechanical injuries, or other diseases, more especially Rheumatism, the Exanthemata, such as Measles, Small Pox, Erysipelas, and Fever. The connection of this disease with acute Rheumatism was first alluded to by Dr David Pitcairn, and afterwards by Drs Wells and Baillie, but it was Sir David Dundas who drew more particularly the attention of the medical world to the fact, in a paper published in the first vol. of the Med. Chir. Trans., London, in which he detailed nine cases, nearly all of which were fatal; the subjects of the disease were all young people, most of them under twenty. As connected with Rheumatism, it not only occurs as a vicarious affection, on the sudden disappearance of the other, (which is the most frequent,) but also when the Rheumatism is regularly cured by the appropriate remedies, and may even co-exist with it, so that the two affections go on *pari passu* and simultaneously. The particular circumstances under which this metastasis is liable to occur, is a pathological point as not yet established. The old physicians believed it to depend

on the existence of some peccant matter transferred to the heart. The French pathologists attributed it to the translation of irritation. Dr George Fordyce thought, however, that metastasis occurred more frequently in those cases of acute Rheumatism, which had been treated by early and copious bleeding; this same opinion is at present entertained by many eminent practitioners, among whom may be mentioned Dr Alison. I take notice of its supervening on Measles, more particularly, from my having become acquainted with the circumstance of three such cases, which occurred in Edinburgh during the past winter. Till the third or fourth day, the symptoms of Measles, both general and local, were so mild as to require no further medical interference than ordinary, when, on the secession of the eruption, Pericarditis suddenly supervened and proved unexpectedly fatal, in one within twenty-four hours, in the two others, at the end of the second day; they were nearly all of the same age, between four and five years old; in none of them was the disease recognised till after death, though, if it had been suspected, there is reason to believe it might. In the bodies of two which were examined twenty-four hours after death, the morbid appearances were the same, viz., enormous distension of the pericardium, by an effusion of serum. M. Guibert has related a very singular case of acute Pericarditis occurring in a boy of twelve years old, which, at the end of the third week was complicated with Measles; the

eruption continued out for six days when it disappeared, and the patient suddenly sunk.* M. Andral mentions a case of Pericarditis having supervened to confluent small-pox, the only indication of which, during life, was great dyspnœa, occurring on the seventh day of the eruption, during the stage of suppuration; in this, as in the three cases of Measles mentioned above, the early symptoms were by no means severe. The patient fell on the tenth day into a state of great prostration, and died. On dissection, nothing more was found than a sero-purulent effusion in the pericardium.† That Pericarditis may supervene to Erysipelas is amply illustrated by a very interesting case, observed and narrated by Dr Abercrombie. The patient was a girl of twelve years of age, and had been affected with Erysipelas, nearly confined to the right cheek, accompanied by a fever rather of the Typhoid type, and obstinate constipation; on the seventh day, slight pain in the left side was complained of, but soon subsided; on the fourteenth, she was apparently in every respect convalescent; on the fifteenth, however, a degree of depression not easily accounted for was observed; her pulse was slow, and rather irregular, and the body cold. The coldness increased, with rapid sinking, and she died in a few hours. *Post mortem*

* Breschet's Repertoire, tome vi. 2 partie.

† Clinique Medicale, Malad. de la Poitrine, tome i. p. 30. Deuzieme Edition.

all the viscera were found healthy, except diseased mesenteric glands. The pericardium was distended with about twelve ounces of turbid milky fluid, with flocculent matter floating in it. The whole inner surface of the pericardium, and outer surface of the heart, were covered by a uniform coating of coagulable lymph, of considerable thickness. The substance of the heart was soft and flaccid. It has been remarked by several authors, that Pericarditis does occasionally occur as an effect of fever, either during its progress, or in the convalescence from it, though inflammation of serous membranes, as a complication with fever is considered comparatively rare. In confirmation however of its happening, may be adduced the remark of Dr Armstrong, in his work on Typhus Fever, in speaking of the delirium present in fever, he says, " certain it is that I have met with some cases accompanied by great intellectual derangement from the beginning, in which the minutest dissection after death could detect no vestige of cerebral disease, though, in all, an effusion of serous fluid was found in the pericardium, with some appearances of inflammation on its surface, and on that part of the pleura which covers the diaphragm."* And farther, I may add an abstract of a case in point, which occurred in the Royal Infirmary of this city. The patient was a man, under the care of Dr Alison, admitted about the sixth day of fever, which, for six days

* Armstrong on Typhus Fever, p. 47.

went on favourably, when he complained of pain in the throat, and along the œsophagus on swallowing; on the ninth, his breathing became hurried, with pain in the lower part of the right side, pulse above 100, easily accelerated; on the tenth, the dyspnœa was greatly aggravated, the pulse became more feeble and irregular, accompanied by subsultus tendinum and delirium, and death occurred on the evening of the twelfth day. On dissection, a slight purulent collection was found in the cellular tissue, at the posterior part of the œsophagus, pleuritic effusion on the right side. There was deposition of recent lymph confined to the reflected layer of the pericardium, and that portion of it which invests the fore part of the aorta and pulmonary artery, and there was, besides, some slight effusion of a yellow fluid into the sac of this membrane. From the state of the pulse, principally, some disease of the heart, or its appendices, was, I believe, suspected during life. Dr Tweedie mentions two cases of somewhat a similar character.*

It is hardly necessary to remark, that, when Pericarditis occurs by metastasis, we very often have combined with it inflammation of the lungs, or pleura, or both simultaneously. It was Dr Cullen's opinion, that acute inflammation of the pericardium was almost always a part of some pneumonic affection, and he does not admit a simple case, except of the chronic form.† With

* Clinical Illustrations of Fever.

† Cullen's First Lines, by Gregory, vol. i. p. 165.

regard to the predisposing influence of sex and age, we may remark, that of fifty-one cases indiscriminately taken almost entirely from English authors, twelve only were females; ten were under twelve years of age, but none below four; sixteen were between twelve and twenty, sixteen between twenty and thirty-five,—of these the largest share were under thirty; five from thirty-five to fifty, and four between fifty and sixty-nine; from which is apparent, 1*st*, The comparative exemption of females from this disease; and, 2*dly*, Its frequent occurrence during the prime of life. Of the same cases, six only appear to have been Idiopathic, all the rest being connected with various diseases, chiefly with Rheumatism.

Diagnosis.

The establishment of a Diagnosis has ever been considered one of the most important and essential departments of medical science, and in those instances of unusual difficulty, where, perhaps, it cannot be attained, its absence must always render our study of disease irksome, and our knowledge of it uncertain. After having enumerated the various morbid alterations discovered after death, and the more varied symptoms by which they are accompanied during life, one is naturally led to consider, with a view to the elucidation of the Diagnosis, whether any constant and necessary relation subsists between them, or, in other words,

if it be possible, from any particular group of external phenomena presented during life, to recognise with any certainty, the internal diseased or pathological condition of the organ affected, and the different modifications of lesion, as to nature, extent, &c., which it may have undergone. From an attentive examination of the cases recorded by Abercrombie, Stokes, and Andral, and from my own limited observation, I fear that in the majority of cases, no such connection of cause and effect as above-contemplated, and so confidently insisted on by Dr Hope, can be traced in this affection, in which respect, its pathology may be said to differ from that of other vital organs under similar circumstances. It must be understood, however, that this remark is not intended to apply to every form and variety of the disease, as in the subacute and protracted cases, more certain and direct information is to be obtained from the general symptoms, than where the case is recent, and one of an acute character. The principal difficulty of Diagnosis in this affection, depends on the circumstance, that the symptoms are ever varying, often but slightly developed, and frequently referred to situations remote from the original seat of the disease, and not directly resulting from it, but arising from general, and, I may call it, sympathetic disturbance. The chief use, then, of the general symptoms, I conceive to be, to suggest to the physician a suspicion of the disease, which, of course, will be more or less strong, according as the indica-

tions are more or less direct; but at all events, when the circulation is much disturbed, though no pain be felt in the region of the heart, it will be his duty to apply those more exact means of ascertaining the existence or absence of the malady which percussion and auscultation afford. And if there be any of the general symptoms more frequently present, or more characteristic than another, I should say it is this irregularity and remarkable sympathetic excitability of the circulating organs, betraying a singular aptitude to be affected to an extraordinary degree by slight causes, such as under any other circumstance would produce scarcely any derangement at all; an effect which as it has been observed in all the varied states of the nervous system, cannot with justice be referred to a greater degree of nervous susceptibility in one patient than in another, though unquestionably this will have its own weight as regards the degree of the same general effect. Thus in cases where so long as the patient remained still and tranquil, the symptoms of disturbance were few and trifling, and the pulse comparatively little altered from its natural condition, either as regards strength and frequency, I have observed the slightest motion, as of turning in bed or the effort of coughing, cause an accelerated and intermittent pulse with palpitations, increased anxiety and other indications of general disturbance. Of this fact a very striking example is given by Dr Gardner, in the second

volume of the Transactions of the Med. Chirurg. Society of Edinburgh, of a young man labouring under Pericarditis, where the pulse varied between the extremes of 80 and 130, on the slightest change of position on the part of the patient.* In one or two cases, I have myself remarked this sensible condition of the pulse. Whenever therefore we meet with the above peculiar indications of the pulse, at the same time conjoined with an irregular, tumultuous, and jerking action of the heart, its force not according with that of the pulse, pain at the precordial region and left hypochondrium increased on pressure, hurried respiration, anxiety of countenance, and other marks of general disturbance, and should such a train of phenomena occur in a young subject without any appreciable cause, or during the progress of any other inflammatory affection, particularly Rheumatism, we may presume the presence of Pericarditis. But our Diagnosis must still be uncertain, as the above symptoms sometimes alternately appear and recede, and as they observe no determinate order or succession, and as many or nearly all may be absent, or when present, may depend on another cause; or lastly, may be masked by the co-existence of other morbid states; our chief dependence, then, must necessarily rest on the indications furnished by the physical signs, viz.,

* Transactions of Med. Chirurg. Society of Edinburgh, vol. ii. 1826.

deadness of sound on percussion, with the absence of the respiratory murmur over the precordial region, the parietes of which may be at the same time more prominent than natural. But as this deadness of sound may be absent from various causes, or lose much of its value from the possible presence of a pleuritic effusion to which it might be referable, the next more unequivocal sign is the *bruit de cuir neuf*—new leather or friction sound, with the concomitant sign of a rubbing sensation communicated to the hand, though this is not always present, and the first will be modified according to certain conditions which have been before adverted to. And these phenomena not only afford us intimation of the presence of the disease from its very commencement, whether in its simple or complicated forms, but also inform us of its extent, progress, arrest, and ultimate termination or relapse, and so regulate the application of remedial measures. As there are many modifications of this friction sound, which from their great similarity may be confounded with those anormal *bruits* depending on valvular disease, I cannot do better than finish this part of the Essay by quoting the distinctions drawn up by Dr Stokes, which seem to me to be incontrovertible; 1*st*, Their sudden supervention in a case where they had not previously existed. We can hardly conceive an amount of valvular disease to arise in a day or two sufficient to cause an intense *bruit de rape*; 2*d*, The accompanying sign

(when it exists) of the rubbing sensation communicated to the hand. This is quite peculiar; *3d*, The rapid change of situation, according to the extension of the inflammation; *4th*, The occurrence of the sounds with both sounds of the heart, in a case which previously presented no sign of organic disease; *5th*, Their subsidence under treatment, and their not appearing even when the heart is excited; *6th*, The very slight extent to which, even when they are loudest, they are generally audible.

And further may be added, that in those cases in which the heart itself is involved, and consequently gives rise to certain morbid sounds, which may easily mask, or be confounded with, the *bruit de frottement*, it will be found that the latter may be recognised by its being quite superficial, very loud to the ear, and less easily perceptible by the Stethoscope.

Before closing this most important part of the subject, one more additional observation claims especial attention, that, in exploring the precordial region, the greatest care must be employed, and the examination must be conducted by means of the *naked ear*, as well as of the Stethoscope, as, where the disease is only partial, by no means an unfrequent occurrence, the necessarily resulting local signs will be but slight, and such as might readily escape detection in a merely cursory examination.

Prognosis.

From all that has been previously said, it must be apparent, that the disease of which we have been treating, is one of extreme danger, owing chiefly to the nature of the organ affected, and partly to the particular circumstances under which it often occurs, I mean Metastasis. The Prognosis therefore must be at all times exceedingly guarded, especially when it is a secondary affection.

A very striking feature in the history of this disease which it is necessary to bear in recollection in this place, is the frequent unexpected occurrence of death in cases, where a short time before, (in some only a few hours,) a decided amelioration was observed, and confident hopes of recovering entertained. This fact receives a melancholy confirmation from the following cases:—Dr Abercrombie's; 1*st*, "Hopes were entertained that she was out of danger, she then became suddenly worse, and died on the following day." 2*d*, "In the evening he was much relieved, he passed a quiet night, but on waking in the morning, he was seized with a slight convulsion, he then sunk into a low exhausted state and died in half an hour." 4*th* case, "Erysipelas disappeared, no fever, tongue clean, appetite returning, next day death occurred." 5*th*, "About three weeks after the attack, he went to bed one evening in perfect health; about three o'clock in the morning was heard to groan heavily,

and in a few minutes was dead."* M. Andral's, case 2*d*, "Eight o'clock P. M. Patient calm, countenance good, breathing easy, made no complaint; died suddenly at eleven the same evening." 3*d*, "Notable amendment up to the 10th day, sudden re-appearance of bad symptoms, death soon after followed."† In the last number of the Edinburgh Med. and Surgical Journal, several analogous cases are recited by Drs Inglis and Thomson.‡ I have myself known an instance, where the patient, who had been doing well, being annoyed by the importunity of visitors, was suddenly seized with a convulsive fit, from which he recovered a short time, when it was succeeded by another, which ended fatally.§ When the disease from the beginning partakes more of the sub-acute form, the Prognosis will be more favourable, but the fact must not be lost sight of, that this affection, as well as all others of the same organ, are very liable to relapse from the slightest causes. It may not be improper to mention here, that Dr Knox is of opinion, that no one has ever survived for any length of time an inflammation of the pericardium, whether acute, sub-acute, or chronic,

* Transactions of Med. Chirurg. Society of Edinburgh, vol. i.

† Clinique Medicale, tome i.,—Maladies de la Poitrine. Deuzieme Edition.

‡ Edinburgh Med. and Surg. Journal, April 1835.

§ As a corroboration of these facts which were written some months ago, I may cite a recently reported case of Dr Elliotson's, where precisely the same unexpected fatal result ensued.

not considering those adhesions of the pericardium to the heart, so often found after death, as necessary proofs of previous inflammation, when no other evidence of such a state had existed during life.*

Signs and Diagnosis of Chronic Pericarditis.

In the description of this form of the affection, I shall restrict myself to a few general remarks. We are furnished with but rare examples of this disease, occurring primarily as a chronic and uncomplicated affection. Bertin mentions only one. Laennec speaks of having met with several, nearly all of which were cured. Like the acute it may be idiopathic, or succeed some other disease, but most frequently is a sequel of the acute. Nearly all authors agree regarding the obscurity of its general symptoms. M. Andral relates two cases in which all the evident signs of aneurism of the heart were present, in neither however was the heart itself diseased, but completely enveloped by a compact layer of false membrane, of more than an inch in thickness.† The symptoms are much the same as those referable to the acute affection, but in a less degree, though still more variable. It may be preceded by a slight cold, or come on without any precursory ailment. The first indica-

* Edinburgh Medical and Surgical Journal, vol. xvii., 1821.

† Clinique Med., tome i.

tion may be some degree of oppression of breathing, accompanied by palpitations occurring at intervals, but not sufficient to attract the attention of the patient, except on making any unusual exertion. As the disease advances, the Dyspnœa increases, and the palpitations become more severe, being generally aggravated by excitement, and after meals; they are rarely constant, but occur in paroxysms of different duration, at definite periods. The patient now no longer capable of his ordinary exercise, or of using any effort, confines himself to bed, and becomes feverish,—the appetite is diminished,—the secretions are scanty,—the features anxious and livid, with coldness of the feet and legs; at length dropsical symptoms appear, first manifested in these cases by an ædematous swelling of the lower extremities, more especially around the ankle joint. The horizontal posture now becomes irksome, from the feeling of suffocation which it causes; propping in bed is therefore necessary, the patient retaining the semi-recumbent position. He complains of great prostration of strength, and is often troubled with much cough and expectoration, and sometimes by occasional attacks of Hemoptysis. The pulse from the beginning is generally small, frequent, and irregular, sometimes sharp, but varying with the altered action of the heart, and with the nature and extent of the morbid changes. Seldom is there much local pain, but rather a sense of constriction or weight at the precordial region. In

this state the patient may linger on for years, with intervals of great amelioration; more frequently, however, death results as a consequence of the aggravation of the dropsical symptoms, or happens suddenly during apparent convalescence, and in this disease, death by apoplexy is by no means of rare occurrence.

Physical Signs.—In general, the precordial region emits a dead sound, corresponding to the extent of the distension of the pericardium, which is for the most part great, and may arise from an effusion of fluid, extensive deposition of lymph, encasing the whole circumference of the heart, or an enlargement of this organ itself. In the first of these states, besides the altered sound on percussion, there may be prominence of the ribs over the precordial region, with the absence of the respiratory murmur in the same place, without any unnatural resonance of the voice; in addition to these, by the aid of the stethoscope, the action of the heart will be found much changed, its movements will be obscure, tumultuous and distant, and more or less undulatory, and the familiar natural tic-tac sound of the systole and diastole will be no longer recognised. In two cases, however, I have observed the sounds of the heart much more audible about the situation of the cartilage of the fourth rib than in any other; the extent of effusion in either case was inconsiderable. We may add to the above, the possibility of fluctuation, perceptible by the hand between the in-

tercostal spaces,—a sign which my friend, Mr C. Tarral, has recognised on several occasions, thus confirming the observation of Senac and Corvisart. In order to perceive this fluctuation, Mr Tarral remarks, " that the effort of coughing, or making certain movements of the chest, will not be sufficient; but if, by applying one finger in the intercostal space, and with another of the same hand placed at a short distance from it, the chest is lightly percussed, the fluctuation will be perceived, and in this way he has often succeeded in detecting effusions which were not previously expected."*

In the second state, that of accumulation of lymph, with adhesion, the signs above-mentioned may all be present, excepting fluctuation and undulatory movements of the heart; and further, it is probable, that in this case, the accelerated action of the heart will be more permanent, with more impulse, and less under the control of repose than in the former; hence the constant frequency of the pulse is in such cases an important sign, as serving to distinguish this diseased condition from those of the heart itself. When accompanied with enlargement of the heart as a consequence of adhesion, all the signs belonging to the second mentioned state occur, with additional ones, vary-

* Journal Hebdomad. du 24th Avril 1820.

Recherches Propres á clairer le Diagnostic de diverses maladies; par M. Claudius Tarral.

ing according as the enlargement may consist of mere dilatation, without hypertrophy, or both combined. The latter Dr Hope represents as being the most frequent, while Dr Abercrombie entertains the opposite opinion. In the former, there will be simple increase of sound, without corresponding increase of impetus; in the latter, with the increase of sound, the impetus will be, in the same ratio, augmented. Besides these, when the motion of the heart is jerking, or its orifices constricted, a murmur may attend one or both sounds. Though Dr Hope states, that in five or six cases, the heart, although enlarged, was found to beat no lower than the natural point, viz., between the fifth and sixth ribs, we know that many medical men trust much to the apex of the heart being felt in a situation inferior to the natural, as a diagnostic of this morbid alteration. Dr Hope adds another sign which he considers the most characteristic of all. It is an abrupt jogging, or tumultuous motion, more evident, and accompanying both the systole and diastole, when hypertrophy and dilatation co-exist.*

* Cycloped. of Practical Med.,—Art., Carditis.

In applying the Stethoscope, which should be done when there is the least agitation present, the patient is often desired to hold his breath for a length of time, in order more clearly to ascertain the sounds of the heart; a practice always attended with great inconvenience, and which may be avoided by requesting the patient to breathe with his mouth open, by which the respiratory murmur is rendered almost inaudible.

Treatment.

The consideration that this disease consists of a violent and active inflammation, in which the functions of one of our most important vital organs may be greatly injured, or completely destroyed, would at once lead us to adopt all those energetic measures, with which we are acquainted; of these the most powerful must be reckoned blood-letting, and should the attention both of the patient and physician fortunately be attracted to the disease at its earliest period, it will prove an agent paramount to every other, in preserving the structure of the organ from the ravages of disease. In the employment however of so powerful a means, the circumstances of each case, as regards the nature, degree, and concomitants of the disease, and also the condition of the patient himself, must be carefully weighed. For though, when the inflammation is idiopathic and active, and the patient robust, it would obviously be right to abstract from a large orifice such a quantity of blood as should make a decided impression on the general system, yet in all cases syncope must be avoided, as it might end fatally, in cases apparently the most favourable for active depletion, and it must be no less obvious, that it would be the height of folly and imprudence to make so free a use of this agent, when the patient has unfortunately been either constitutionally very feeble, or, as may often be the case, much exhausted by suffer-

ing under a primary disease, to which Pericarditis supervened, and by the evacuations and other remedial measures employed for its cure. Whether therefore the circumstances have been such as to warrant, or to forbid the employment of a first large bleeding, we must in the one case follow up, and in the other commence and complete, this branch of the treatment, either by small and repeated detraction from the system at large, or, what is better, and so strongly recommended to us by the high authority of Drs Elliotson, Alison, and Stokes, by topical bleeding. Should the patient be an adult, and tolerably strong, thirty or forty leeches may be applied at once to the precordial region, and repeated according to circumstances. And subsequently, should there be much vomiting, pain increased on pressure, and other signs of gastric affection, the application of the same number to the epigastrium will be found beneficial. The bleeding in each instance to be encouraged by fomentations, and the use of warm light poultices. When leeches are not to be had, cupping may be substituted, though the former are certainly preferable. Should we find, from the employment of such measures, that all the more urgent symptoms have been relieved, or some of them removed, as pain, dyspnœa, anxiety of countenance, while at the same time, the excessive action of the heart is subdued and lessened in frequency, and the pulse more calm, and by Auscultation we find no anormal bruit, the

sound of the chest being clear, and respiration every where audible, we may be satisfied of the efficacy of our treatment, and add to it other general means, such as the internal use of digitalis, colchicum, supposing it to be a Rheumatic affection,—opium, or mercury, and lastly the contra-stimulant plan, by tartar emetic, each of which has its advocates.

Digitalis, from its known property of lowering vascular action, may prove a useful auxiliary, but is probably more serviceable in the chronic form. Colchicum has been long celebrated as a powerful remedy in Rheumatism, a circumstance which suggested to Dr Elliotson its employment in Rheumatic Pericarditis, in which he found it a medicine of great efficacy; he recommends commencing with a scruple or half a drachm of the wine of colchicum, taken three times a-day, the dose to be gradually augmented, and to be discontinued as soon as purging is produced, which it seldom fails to excite, before its therapeutic influence is developed. From the utility of Opium in abdominal inflammations so admirably established by Dr Alison,* and referred by him not to the diaphoretic effect of the drug, but to its powers in allaying and remedying that general irritation, and those sympathetic affections, on which, more than on the primary inflammation itself, he justly conceives the danger often to depend, it has occurred to me, that we might expect at least equal

* Cyclop. of Practical Med.—Art. History of Medicine.

benefit from its employment in many cases of this disease, where, as we have previously remarked, the greatest mischief often accrues from the sympathetic derangement of other organs, and especially, of the nervous system at large; since therefore, the extent of this sympathetic disturbance is greater in Pericarditis than in Peritoneal inflammation, if we are to be guided at all by analogy in the adoption of remedies, an *a fortiori* case in favour of the employment of opium in this disease, seems to me to be clearly made out. I should be inclined to make free use of it even in the early stages, in those cases where bleeding has been either inadequate to produce the desired effects, or from the condition of the patient, cannot be freely and safely employed. Dr Latham has strenuously advocated the use of Mercury in this disease, and affirms, that a complete cure cannot be effected by any remedies whatever, if unaided by the specific effect of this medicine.* But neither has he himself produced any cases of cure accomplished in this way, nor are we in possession of such facts from other sources as will enable us to say that this affection, even in a fair proportion of instances, though taken under the most advantageous circumstances, ever undergoes a perfect cure by the use of Mercury, in fact it does occasionally happen that Metastasis to the heart occurs during the progress of acute Rheumatism, in those individuals whose system is at

* Med. Gazette, vol. iii. 1828, p. 215.

the same time under the Mercurial influence. In concluding these observations, I cannot do better than quote the following remark of Dr Alison. "But when the action of Mercury on the mouth has been excited in the course of acute internal inflammation, we have not been only very generally disappointed of seeing any improvement of the symptoms immediately follow that change, but are constrained to add that we have seen an aggravation of them." * With respect to the internal use of Tartar Emetic in Pericarditis, I have only to remark, that in cases where the affection has been complicated with extensive pneumonic inflammation, its administration has been attended with beneficial results. In a case related by Dr Stokes in which the effects of Mercury has been tried, but without success, the Tartar Emetic was had recourse to, and under its use the pulmonary symptoms speedily subsided, and the patient eventually got well. The medicine was continued for six days, at the rate of six grains each day.†

Epispastics may be useful as counter-irritants, especially in Rheumatic Metastasis, where it is our object to recall the inflammation to the extremities, With regard to diet, it must be strictly antiphlogistic; and to allay thirst, and other febrile symptoms, such diluent drinks as barley or gum water, acidulated to the taste of the patient, should be given, in which may be dissolved a drachm of

* Cyclop. of Pract. Med.—Art. History of Medicine, p. 16.

† Dublin Journal, Sept. 1833, p. 48.

Nitrate of Potass, in the quantity to be taken during the day.

Nor should such drinks be permitted *ad libitum*, lest by distending the stomach they may produce, or aggravate the dyspnoea and palpitation. Of course contingent affections, such as syncope, convulsions &c., must be treated by their appropriate remedies, Having in a former part of this Essay, noticed the peculiar state of the circulating organs, and how they may be effected to a dangerous, or even fatal extent, by the least excitement, it must be apparent that one of the principal conditions of treatment is absolute repose, to be rigorously enjoined, and therefore it will be prudent, in the early stages more particularly, to abstain from the administration of purgatives, and allow the bowels to be relieved by gentle laxative Enemata.

In treating the chronic form, our chief dependance ought to be placed on counter-irritants, such as open blisters, setons, and tartar emetic ointment, and the topical abstraction of blood by leeches, or cupping, with the internal use of digitalis and opium; and for the dropsical symptoms diuretics ought to be given.

The diet and regimen should be carefully attended to, and all such means had recourse to as tend to improve and establish the general health.

FINIS.