From: M. Foucault, The Birth of the Clinic, Tavistock Publications, 1973, Taylor and Francis, 2003, French original, 1963.

9 · The Visible Invisible

From the point of view of death, disease has a land, a mappable territory, a subterranean, but secure place where its kinships and its consequences are formed; local values define its forms. Paradoxically, the presence of the corpse enables us to perceive it living—living with a life that is no longer that of either old sympathies or the combinative laws of complications, but one that has its own roles and its own laws.

I. PRINCIPLE OF TISSUAL COMMUNICATION

Roederer and Wagler had already defined *morbus mucosus* as an inflammation that may affect both the internal and the external surface of the alimentary canal throughout its full length [1]. Bichat generalized this observation: a pathological phenomenon follows in the organism the privileged way prescribed by tissual identity. Each type of membrane has its own pathological modalities: 'Since diseases are merely alterations of vital properties, and since each tissue differs from others in relation to these properties, it is evident that it must also differ in its diseases' [2]. The arachnoid may be affected by the same forms of dropsy as the pleura of the lung or the peritoneum, since there are serous membranes present in each case. The network of sympathies that was fixed only on unsystematized resemblances, empirical observations, or a conjectural assignation of the nervous network now rests on a strict

analogy of structure: when the envelopes of the brain are inflamed, the sensitivity of the eyes and ears is sharpened; in the operation of hydrocele by injection, the irritation of the vaginal wall causes pains in the lumbar region; an inflammation of the intestinal pleura may, by a 'sympathy of tonicity', cause a cerebral affection [3]. The pathological course now has its obligatory ways.

II. PRINCIPLE OF TISSUAL IMPERMEABILITY

This is the correlative of the preceding principle. Extending in areas, the morbid process follows a tissue horizontally, without penetrating vertically into others. Sympathetic vomiting concerns the fibrous tissue, not the mucous membrane of the stomach; diseases of the periosteum are alien to bone, and when there is catarrh in the bronchi, the pleura remains intact. The functional unity of an organ is not enough to force the communication of a pathological fact from one tissue to another. In hydrocele, the testicle remains intact in the midst of inflammation of the enveloping tunic [4]; while infections of the cerebral pulp are rare, those of the arachnoid are frequent, and of a very different type, again, from those of the pia mater. Each tissual stratum possesses and retains its own pathological characteristics. Morbid diffusion is a matter of isomorphic surfaces, not of proximity or of superposition.

III. PRINCIPLE OF PENETRATION BY BORING

Without calling them into question, this principle limits the preceding two. It compensates the rule of homology by the rules of regional influences, and the rule of impermeability by admitting forms of penetration by layer. An affection may last sufficiently long to impregnate subjacent or neighbouring tissues: this is what occurs in chronic diseases like cancer, when all the tissues of an organ are successively affected and, in the end, are 'confused in a common mass' [5]. Less easily assignable movements also occur: not by impregnation or by contact but by a double movement from one tissue to another, and from a structure to a function. The alteration of one membrane may, without affecting the neighbouring membrane, prevent more or less completely the performance of its

functions: the mucous secretions of the stomach may be affected by inflammation of the fibrous tissues; and the intellectual functions may be affected by lesions of the arachnoid [6]. The forms of intertissual penetration may be even more complex: in affecting the investing membrane of the heart, pericarditis may cause a functional disorder resulting in hypertrophy of the organ, and therefore a modification of its muscular substance [7]. At its origin, pleurisy concerns only the pleura of the lung; but as a result of the disease, the pleura may secrete an albuminous liquid which, in chronic cases, covers the whole lung; the lung atrophies, and its activity is diminished to the point of an almost total cessation of its functioning, and it is then so reduced in surface and volume that it seems as if most of its tissue has been destroyed [8].

IV. PRINCIPLE OF THE SPECIFICITY OF THE MODE OF ATTACK ON THE TISSUES

Alterations whose trajectory and work are determined by the preceding principles belong to a typology that depends not only on the point that they attack but on their own nature. Bichat did not go very far in the description of these various modes, since he distinguished only between inflammations and scirrhi. Laënnec, as we have seen [9], attempted a general typology of alterations (of texture, of form, of nutrition, of position, and those due to the presence of foreign bodies). But the very notion of an alteration of texture is inadequate to describe the various ways in which a tissue may be attacked in its internal constitution. Dupuytren proposed to distinguish between transformations from one tissue to another and the productions of new tissues. In one case, the organism produces a tissue that exists regularly but that is usually found only in another localization, in the case of unnatural ossifications; cellular, adipose, fibrous, cartilaginous, osseous, serous, synovial, and mucous productions may be enumerated; such cases are *aberrations* of the laws of life, not *alterations*. In the contrary case, in which a new tissue is created, the laws of organization have been fundamentally disturbed; the lesional tissue is different from any tissue existing in nature; inflammation, tubercles, scirrhi, and cancer are of this kind. Finally, articulating this typology onto the principles of tissual localization, Dupuytren noted that each membrane has its special type of alteration: for example, polyps on the mucous

membranes or dropsy in the serous membranes [10]. It was by applying this principle that Bayle was able to follow the evolution of phthisis from beginning to end, recognize the unity of its processes, specify its forms, and distinguish it from affections whose symptomatology may be similar but which belong to an absolutely different type of alteration. Phthisis is characterized by a 'progressive disorganization' of the lung, which may assume a tuberculous, ulcerous, calculous, granulous, melanotic, or cancerous form; and it must be confused neither with irritation of the mucous membranes (catarrh), nor with alteration of the serous secretions (pleurisy), nor, above all, with an alteration that also attacks the lung itself, but in the form of inflammation, namely, chronic pleuropneumonia [11].

V. PRINCIPLE OF ALTERATION OF ALTERATION

Generally speaking, the preceding rule excludes the diagonal affections that intersect various modes of attack and use them in turn. However, there are effects of facilitation that link different disorders together: inflammation of the lungs and catarrh do not constitute tuberculosis, but they do encourage its development [12]. Chronicity, or at least the persistence of an attack over a period of time, sometimes permits one affection to take over from another. In a sudden type of fluxion, cerebral congestion causes a distension of the vessels (hence vertigo, dizziness, optical illusions, ringing in the ears) or, if it is concentrated in one point, a rupture of the vessels with resulting haemorrhage or immediate paralysis. But if the congestion occurs by means of a slow invasion, there is first a sanguineous infiltration into the cerebral matter (accompanied by convulsions and pains), a corresponding softening of this substance—which, by admixture with the blood, alters in depth and agglutinates to form inert islets (hence paralyses)—and finally a complete disorganization of the arteriovenous system in the cerebral parenchyma and often even in the arachnoid. From the appearance of the earliest forms of softening, serous discharges and then an infiltration of pus that sometimes gathers into an abscess can be observed: finally, the suppuration and extreme softening of the vessels replace the irritation due to their congestion and hypertension [13].

These principles define the rules of the pathological cursus and describe in advance the possible paths that it must follow. They fix the network of its space and development, revealing in transparency

the nervures of the disease. The disease assumes the figure of a great organic vegetation, which has its own forms of sprouting, its own ways of taking root, and its own privileged regions of growth. Spatialized in the organism in accordance with their own lines and areas, pathological phenomena take on the appearance of living processes. This has two consequences: disease is hooked onto life itself, feeding on it, and sharing in that 'reciprocal commerce of action in which everything follows everything else, everything is connected with everything else, everything is bound together' [14]. It is no longer an event or a nature imported from the outside; it is life undergoing modification in an inflected functioning: 'In the final analysis, every pathological phenomenon derives from their augmentation, diminution, and alteration' [15]. Disease is a deviation within life. Furthermore, each morbid group is organized according to the model of a living individual: there is a life of tubercles and a life of cancers. There is a life of inflammation; the old rectangle that qualifies it (tumour, redness, heat, pain) is inadequate to restore its development throughout the various organic stratifications: in the blood capillaries, it is conveyed by resolution, gangrene, induration, suppuration, and abscess; in the white capillaries, the curve moves from resolution to white, tuberculous suppuration, and from there to incurable rodent ulcers [16]. So the idea of a disease attacking life must be replaced by the much denser notion of *pathological life*. Morbid phenomena are to be understood on the basis of the same text of life, and not as a nosological essence: 'Diseases have been regarded as a disorder; one has failed to see in them a series of phenomena all dependent upon one another, usually tending to a particular end: pathological life has been completely neglected.'

Is this, at last, a non-chaotic, ordered development of disease? But it had already been a long-acquired fact; botanical regularity, the constancy of clinical forms had brought order to the world of illness long before the advent of the new anatomy. It was not the fact of ordering that was new, but its mode and basis. Between Sydenham and Pinel disease assumed a source and a face in a general structure of rationality concerning *nature* and the order of things. From Bichat onwards, the pathological phenomenon was perceived against the background of *life,* thus finding itself linked to the concrete, obligatory forms that it assumed in an organic individuality. Life, with its finite, defined margins of variation, was to play the same role in

pathological anatomy as the broad notion of nature played in nosology: it was the inexhaustible, but closed basis in which disease finds the ordered resources of its disorders. A distant, theoretical change that, in the long term, modified a philosophical horizon; but can it be said that it affected at once a world of perception and the gaze that a doctor turns upon a patient?

It did so, no doubt, in a very considerable, decisive way. The phenomena of disease find there their ontological support. Paradoxically, clinical 'nominalism' left floating at the limit of the medical gaze, at the grey frontiers of the visible and invisible, something that was both the totality of phenomena and their law, their point of recollection, as well as the strict rule of their coherence; disease had truth only in symptoms, but it was symptoms given in truth. The discovery of the vital processes as the content of disease makes it possible to give a foundation that is nevertheless neither distant nor abstract: a foundation as close as possible to what is manifest; disease will now be merely the pathological form of life. The great nosological essences, which hovered over the order of life and threatened it, are now circumvented by it: life is the immediate, the present, and the perceptible *beyond* disease; and disease, in turn, finds its phenomena once more in the morbid form of life.

Is this the reactivation of a vitalist philosophy? It is true that the thought of Bordeu or Barthez was familiar to Bichat. But if vitalism is a schema of specific interpretation of healthy or morbid phenomena in the organism, it is much too feeble a concept to account for an event of the significance of the discovery of pathological anatomy. Bichat revived the theme of the specificity of the living only in order to place life at a deeper, more concealed ontological level: for him, it is not a set of characteristics that are distinguished from the inorganic, but the background against which the opposition between the organism and the non-living may be perceived, situated, and laden with all the positive values of conflict. Life is not the form of the organism, but the organism is the visible form of life in its resistance to that which does not live and which opposes it. An argument between vitalism and mechanism, or between humourism and solidism, had meaning only insofar as nature, too broad an ontological foundation, left room for the play of those interpretive models: normal or abnormal functioning could be explained only by reference either to a pre-existing form or to a specific type. But as soon as life explained not solely a series of natural figures but assumed sole responsibility for the role of the absolute, considered basis that the eighteenth century accorded to

nature, the very idea of vitalism lost its signification and the essence of its content. By giving life, and pathological life, so fundamental a status, Bichat freed medicine from the vitalist and other related problems. Hence the feeling, which bore up the theoretical reflexion of most doctors at the beginning of the nineteenth century, that they were free at last of systems and speculations. The clinicians Cabanis and Pinel felt that their method was realized philosophy [17]; the anatomo-pathologists discovered in theirs a non-philosophy, an abolished philosophy, that they had conquered in learning at last to perceive: it was simply a question of a shift in the ontological foundation on which their perception was based. It seemed to them that an absolute theoretical reduction had taken place: a mirage effect due solely to a radical interpretation of life.

At this epistemological level, life is to be distinguished from the inorganic only at a superficial level, and in the order of its consequences. It is profoundly bound up with death, as to that which positively threatens to destroy its living force. In the eighteenth century, disease was both nature and counter-nature, since it possessed an ordered essence, but it was of its essence to compromise natural life. From Bichat onwards, disease was to play the same dual role, but between life and death. Let us be clear about this: an experience devoid of both age and memory knew, well before the advent of pathological anatomy, the way that led from health to disease, and from disease to death. But this relationship had never been scientifically conceived or structured in medical perception; at the beginning of the nineteenth century it acquired a figure that can be analysed at two levels. That which we know already: death as the absolute point of view over life and opening (in all senses of the term, even the most technical) on its truth. But death is also that against which life, in daily practice, comes up against; in it, the living being resolves itself naturally: and disease loses its old status as an accident, and takes on the internal, constant, mobile dimension of the relation between life and death. It is not because he falls ill that man dies; fundamentally, it is because he may die that man may fall ill. And beneath the chronological life/disease/death relation, another, earlier, deeper figure is traced: that which links life and death, and so frees, besides, the signs of disease.

Earlier, death appeared as the condition of the gaze that gathered together, in a reading of surfaces, the time of pathological events; it enabled the disease to be articulated at last in a true discourse. Now

it appears as the source of disease in its very being, that possibility internal to life, but stronger than it, which exhausts it, diverts it, and finally makes it disappear. Death is disease made possible in life. And although it is true that for Bichat the pathological phenomenon is connected with the physiological process and derives from it, this derivation, in the gap that it constitutes, and which denounces the morbid fact, is based upon death. Deviation in life is of the order of life, but of a life that moves towards death.

Hence the importance assumed with the appearance of pathological anatomy by the concept of 'degeneration'. It was already an old notion: Buffon applied it to individuals or series of individuals that diverged from their specific type [18]; doctors also used it to designate that weakening of natural robust humanity that life in society, civilization, laws, and language condemn little by little to a life of artificiality and disease; to degenerate was to describe a decline from an original status, figuring by natural right at the summit of the hierarchy of perfections and times; in this notion is gathered up all that was most negative in the historical, the atypical, and the counter-natural. Based, from Bichat onwards, on a perception of death that was at last conceptualized, degeneration was gradually to be given a positive content. At the frontier of the two significations, Corvisart defined organic disease by the fact that 'an organ, or any solid living thing, is as a whole or in one of its parts degenerated enough from its natural condition for its easy, regular, constant action to be endangered or disordered in a perceptible and permanent way' [19]. A broad definition that embraces every possible form of anatomical and functional alteration; and, again, a negative definition, since degeneration is merely a distance taken in relation to a state of nature: a definition that nevertheless authorizes the first movement of a positive analysis, since Corvisart specifies its forms as 'alterations of contexture', modifications of symmetry, and changes in 'the physical and chemical mode of being' [20]. In this sense, degeneration is the external curve in which lodge the singular points of pathological phenomena; at the same time it is the principle governing the reading of their fine structure.

Within such a general framework, the point of application of the concept was open to controversy. In a report on organic diseases, Martin [21] contrasted tissual formations (whether of a known or a new type) with degenerations, in the strict sense, which modify only the form or internal structure of the tissue. On the other hand,

Cruveilhier, also criticizing too wide a use of the term 'degeneration', wished to reserve it for that disordered activity of the organism that creates tissues that have no parallel in the state of health; such tissues, which usually present 'a fatty, greyish texture', are to be found in tumours, in the irregular masses formed at the expense of the organs, in ulcers or fistulas [22]. According to Laënnec, one may speak of degeneration in two precise cases: when one tissue changes into another that exists in a different form and localization in the organism (osseous degeneration of the cartilages, fatty degeneration of the liver); and when a tissue assumes a texture or configuration that has no pre-existing model (tuberculous degeneration of the lymphatic glands or of the pulmonary parenchyma; scirrhous degeneration of the ovaries or testicles) [23]. But in any event one cannot speak of degeneration in the case of a pathological superposition of tissues. An apparent thickening of the dura mater is not always an ossification; in anatomical examination, it is possible to detach on the one hand the arachnoid and on the other the dura mater: a tissue is then revealed that has been deposited between the membranes, but this is not a degenerate development of one of them. One should speak of degeneration only in the case of a process that rakes place within the tissual texture; it is the pathological dimension of its own evolution. A tissue degenerates when it is sick *qua* tissue.

This tissual sickness may be characterized by three indices. It is not simply a decline, nor is it a free deviation; it obeys certain laws: 'Nature is constrained by constant laws in the destruction as in the construction of beings' [24]. Organic legality is not, therefore, simply a precarious, delicate process; it is a reversible structure the stages of which follow a certain definite direction: 'the phenomena of life follow laws, even in their alterations' [25]. A direction indicated by figures whose level of organization becomes weaker and weaker; first, the morphology becomes blurred (irregular ossifications); then intra-organic differentiations occur (cirrhosis, hepatization of the lung); finally, the internal cohesion of the tissue disappears: when it is inflamed, the cellular sheath of the arteries 'allows itself to be cut like lard' [26], and the tissue of the liver may be pulled away with no effort. This disorganization may even become auto-destruction, as in the case of tuberculous degeneration, when the ulceration of the nuclei causes the destruction not only of the parenchyma but of the tubercles themselves. Degeneration is not, therefore, a return to the inorganic; or, rather, it is such a return only insofar as it is infallibly orientated towards death.

The disorganization that characterizes it is not that of the non-organic, it is that of the non-living, of life caught up in the process of self-destruction: 'we must call pulmonary phthisis any lesion of the lung which, left to itself, produces a progressive disorganization of that organ as a result of which occur its alteration and, finally, death' [27]. That is why there is a form of degeneration that constantly accompanies life and, throughout its entire duration, defines its confrontation with death: The idea of the alteration and lesion of parts of our organs by the very fact of their action is one that most authors have not deigned to consider' [28]. Wear is an ineffaceable temporal dimension of organic activity: it measures the silent work that disorganizes tissues simply by virtue of the fact that they carry out their functions, and that they encounter 'a host of external agents' capable of 'overpowering their resistance'. Gradually, from the moment they move into action and confront the outside world, death begins to indicate its imminence: it insinuates itself not only in the form of possible accident; with life it forms its movements and times, the single web that both constitutes and destroys it.

Degeneration lies at the very principle of life, the necessity of death that is indissociabiy bound up with life, and the most general possibility of disease. A concept whose structural link with the anatomo-pathological method now appears in all its clarity. In anatomical perception, death was the point of view from the height of which disease opened up onto truth; the life/disease/death trinity was articulated in a triangle whose summit culminated in death; perception could grasp life and disease in a single unity only insofar as it invested death in its own gaze. And now the same configuration can be seen in perceived structures, but in an inverted mirror image: life with its real duration and disease as a possibility of deviation find their origin in the deeply buried point of death; it commands their existence from below. Death, which, in the anatomical gaze, spoke retroactively the truth of disease, makes possible its real form by anticipation.

For thousands of years, medicine had sought a mode of articulation that might define the relations between disease and life. Only the intervention of a third term was able to give to their encounter, to their coexistence, to their interferences, a form based both on conceptual possibility and on perceived plenitude; this third term is death. On the basis of death, disease is embodied in a space that coincides with that of the organism; it follows its lines and

dissects it; it is organized in accordance with its general geometry; it is also inflected towards its singularities. From the moment death was introduced into a technical and conceptual organon, disease was able to be both spatialized and individualized. Space and individual, two associated structures deriving necessarily from a death-bearing perception.

In the depths of its being, disease follows the obscure, but necessary ways of tissual reactions. But what now becomes of its visible body, that set of phenomena without secrets that makes it entirely legible for the clinicians' gaze: that is, recognizable by its signs, but also decipherable in the symptoms whose totality defined its essence without residue? Does not the whole of this language incur the risk of being relieved of its specific weight and reduced to a series of surface events, lacking in both grammatical structure and semantic necessity? In assigning to disease silent paths in the enclosed world of bodies, pathological anatomy reduces the importance of clinical symptoms and substitutes for a methodology of the visible a more complex experience in which truth emerges from its inaccessible reserve only in the passage to the inert, to the violence of the dissected corpse, and hence to forms in which living signification withdraws in favour of a massive geometry.

A new reversal of the relations between signs and symptoms. In the earliest form of clinical medicine, the sign was not by nature different from symptoms [29]. Every manifestation of disease could, without essential modification, take on the value of a sign, providing an informed medical reading could place it in the chronological totality of the illness. Every symptom was a potential sign, and the sign was simply a read symptom. Now, in an anatomoclinical perception the symptom may quite easily remain silent, and the significant nucleus with which one believed it to be armed prove to be non-existent. What visible symptom can indicate pulmonary phthisis with certainty? Neither difficulty in breathing, which may be found in a case of chronic catarrh, and not be found in a tubercular patient; nor coughing, which also belongs to neuropneumonia but not always to phthisis; nor hectic fever, which is frequent in pleurisy, but which often appears only in the latter stage of phthisis [30]. The silence of symptoms can be circumvented, but it cannot be overcome. The sign plays precisely this role of a detour: it is not an expressive symptom, but one which is substituted for the fundamental absence

of expression in the symptom. In 1810, Bayle had been forced to reject in turn all the semeiological indications of phthisis: none was either evident or certain. Nine years later, Laënnec, sounding a patient whom he believed to be suffering from pulmonary catarrh, combined with bilious fever, had the impression that he was listening to the voice emerging directly out of the chest, and this on a small surface of about a square inch. Perhaps it was the effect of a pulmonary lesion, a sort of opening in the body of the lung. He met with the same phenomenon in about twenty consumptives; then he distinguished it from a fairly similar phenomenon to be observed in pleurisy patients: the voice also seemed to emerge from the chest, but it was more than naturally sharp; it seemed thin and quavering [31]. Laënnec therefore laid down 'pectoriloquy' as the only certain pathognomonic sign of pulmonary phthisis, and 'egophony' as the sign of pleuretic discharge. It can be seen that in anatomo-clinical experience the sign has an entirely different structure from that attributed to it, only a few years earlier, by the clinical method. In Zimmermann's or Pinel's perception, the sign was all the more eloquent, all the more certain, the more surface it occupied in the manifestations of the disease: thus fever was the major symptom, and consequently the most certain sign, and the one closest to the essential, by which the series of diseases bearing precisely the name of 'fever' could be recognized. For Laënnec, the value of the sign is no longer related to symptomatic extension; its marginal, restricted, almost imperceptible character enables it to traverse, diagonally as it were, the visible body of the disease (composed of general and uncertain elements) and to attain its nature at a stroke. By that very fact, it divests itself of the statistical structure that it possessed in pure clinical perception: in order for it to produce certainty, a sign had to belong to a convergent series, and it was the random configuration of the whole that bore the truth; now the sign speaks alone, and what it declares is apodictic: coughing, chronic fever, weakness, expectoration, and haemoptysis make phthisis more and more probable, but, in the last resort, never quite certain; pectoriloquy alone designates it without any possibility of error. Finally, the clinical sign referred to the disease itself, the anatomo-clinical sign to the lesion; and although certain tissue alterations are common to several diseases, the sign that reveals them can say nothing about the nature of the disorder: one may observe hepatization of the lung, but the sign that indicates it will not say

what disease is responsible for that condition [32]. The sign, then, can refer only to a lesional occurrence, never to a pathological essence.

Significant perception is therefore structurally different in the world of the clinical as it existed in its first form, and as modified by the anatomical method. This difference is apparent even in the way in which the pulse was taken before and after Bichat. For Menuret, the pulse is a sign because it is a symptom, that is, insofar as it is a natural manifestation of the disease, and fully communicates with its essence. Thus a 'full, strong, rebounding' pulse indicates a plethora of blood, vigorous pulsations, and congestion of the vascular system, all of which suggest the possibility of a violent haemorrhage. The pulse 'holds by its causes to the constitution of the machine, to the most important and most extensive of its functions; by its skilfully grasped and developed characteristics, it uncovers the whole inside of man'; thanks to the pulse, 'the doctor shares in the science of the supreme being' [33]. In distinguishing between capital, pectoral, and ventral pulsations, Bordeu did not modify the form of perception of the pulse. It was still a question of reading a particular pathological state in the course of its evolution, and of foreseeing its most probable development; thus the simple pectoral pulse is soft, full, dilated; the pulsations are equal, but undulating, forming a sort of double wave 'with an ease, a softness, and a gentle force of oscillation that makes it impossible to confuse this kind of pulse with the others' [34]. It is the indication of an evacuation in the chest region. When Corvisart, on the other hand, takes his patient's pulse, it is not the symptom of an affection that he seeks, but the sign of a lesion. The pulse no longer possesses expressive value in its qualities of softness or fullness; but anatomoclinical experience made it possible to draw up a picture of the biunivocal correspondences between the appearance of the pulsations and each lesional type: the pulse is strong, hard, vibrant, and frequent in active aneurisms without complications; soft, slow, regular, easy to smother in simple passive aneurisms; irregular, unequal, undulating in permanent contractions; intermittent, irregular at intervals in temporary contractions; weak and scarcely perceptible in hardenings, ossifications, softenings; rapid, frequent, disordered, and almost convulsive in cases of the rupture of one or several bunches of fleshy fibres [35]. It is no longer a question of a science analogous with that of the Supreme Being, conforming to the laws

of natural movements, but of the formulation of a certain number of perceptions of signals.

The sign no longer speaks the natural language of disease; it assumes shape and value only within the questions posed by medical investigation. There is nothing, therefore, to prevent it being solicited and almost fabricated by medical investigation. It is no longer that which is spontaneously stated by the disease itself; it is the meeting point of the gestures of research and the sick organism. This explains why Corvisart was able, without any major theoretical problem, to reactivate Auenbrugger's relatively old and completely forgotten discovery. This discovery was based on well-founded pathological knowledge: the diminution of the volume of air contained by the thoracic cavity in many pulmonary affections. It was also explained by a datum of simple experience: the degree of dullness of the sound produced when a barrel is struck indicates the degree to which it is filled. Lastly, it was justified by experimentation on corpses: 'If in a corpse the sound cavity of the thorax is filled with liquid by means of injection, then the sound, on the side of the chest that has been filled, becomes deadened up to the height reached by the injected liquid' [36].

It was natural that clinical medicine at the end of the eighteenth century should ignore a technique that made a sign appear artificially where there had been no symptom, and solicited a response when the disease itself did not speak: a clinic as expectant in its reading as in its therapeutics. But as soon as pathological anatomy compels the clinic to question the body in its organic density, and to bring to the surface what was given only in deep layers, the idea of a technical artifice capable of surprising a lesion becomes once again a scientifically based idea. The return to Auenbrugger can be explained by the same reorganization of structures as the return to Morgagni. Sounding by percussion is not justified if the disease is composed only of a web of symptoms; it becomes necessary if the patient is hardly more than an injected corpse, a half-filled barrel.

To establish these signs, artificial or natural, is to project upon the living body a whole network of anatomo-pathological mappings: to draw the dotted outline of the future autopsy. The problem, then, is to bring to the surface that which is layered in depth; semiology will no longer be a *reading,* but the set of techniques that make it possible to constitute a *projective pathological anatomy*. The clinician's gaze was directed upon a succession and upon an area of pathological events; it had to be both synchronic and diachronic, but

in any case it was placed under temporal obedience; it *analysed a series*. The anatomo-clinician's gaze has *to map a volume;* it deals with the complexity of spatial data which for the first time in medicine are three-dimensional. Whereas clinical experience implied the constitution of *a mixed web of the visible and the readable,* the new semiology requires a sort of *sensorial triangulation* in which various atlases, hitherto excluded from medical techniques, must collaborate: the ear and touch are added to sight.

For thousands of years, after all, doctors had tested patients' urine. Later, they began to touch, tap, listen. Was this the result of the raising of moral prohibitions by the Enlightenment? If such was the case, it would be difficult to understand why, under the Empire, Corvisart should have reintroduced percussion, or why, under the Restoration, Laënnec should have put his ear, for the first time, to women's breasts. The moral obstacle was experienced only when the epistemological need had emerged; scientific necessity revealed the prohibition for what it was: Knowledge invents the Secret. Zimmermann, in order to discover the force of the circulation, had expressed a wish that 'doctors should be free to make their observations in this respect by placing their hands directly on the heart'; but he added that 'our delicate morals prevent us from doing so, especially in the case of women' [37]. In 1811, Double criticized this 'false modesty', this 'excessive restraint'; not that he believed that such a practice should be carried out without any reserve what-soever: 'this exploration, which is carried out very precisely above the chemise, may take place with all possible decency' [38]. The moral screen, the need for which was recognized, was to become a technical mediation. The *libido sciendi,* strengthened by the prohibition that it had aroused and discovered, circumvents it by making it more imperious; it provides it with scientific and social justifications, inscribing it within necessity in order to pretend the more easily to efface it from the ethical, and to build upon it the structure that traverses it and maintains it. It is no longer shame that prevents contact, but dirt and poverty; not the innocence, but the disgrace, of the body. Auscultation is not only direct, but 'inconvenient for both doctor and patient; only disgust makes it more or less impracticable in hospitals, it is scarcely mentionable in the case of most women, and in the case of some women, the size of the breasts is a physical obstacle to its practice'. The stethoscope is the measure of a prohibition transformed into disgust, and a material obstacle:

> In 1816, I was consulted by a young person who presented symptoms of heart disease, and in the case of whom the application of the hand and percussion yielded poor results on account of her plumpness of figure. Since the age and sex of the patient forbade me the kind of examination of which I have just spoken (the application of the ear to the precordial region), I happened to recall a well-known acoustical phenomenon: if one places one's ear at the end of a beam, one can hear very distinctly a pin dropped on to the other end [39].

The stethoscope, solidified distance, transmits profound and invisible events along a semi-tactile, semi-auditory axis. Instrumental mediation outside the body authorizes a withdrawal that measures the moral distance involved; the prohibition of physical contact makes it possible to fix the virtual image of what is occurring well below the visible area. For the hidden, the distance of shame is a projection screen. What one *cannot* see is shown in the distance from what one *must not* see.

Thus armed, the medical gaze embraces more than is said by the word 'gaze' alone. It contains within a single structure different sensorial fields. The sight/touch/hearing trinity defines a perceptual configuration in which the inaccessible illness is tracked down by markers, gauged in depth, drawn to the surface, and projected virtually on the dispersed organs of the corpse. The 'glance' has become a complex organization with a view to a spatial assignation of the invisible. Each sense organ receives a partial instrumental function. And the eye certainly does not have the most important function; what can sight cover other than 'the tissue of the skin and the beginning of the membranes'? Through touch we can locate visceral tumours, scirrhous masses, swellings of the ovary, and dilations of the heart; while with the ear we can perceive 'the crepitation of fragments of bone, the rumbling of aneurism, the more or less clear sounds of the thorax and the abdomen when sounded' [40]. The medical gaze is now endowed with a plurisensorial structure. A gaze that touches, hears, and, moreover, not by essence or necessity, sees.

Let me quote a historian of medicine: 'As soon as one used the ear or the finger to recognize on the living body what was revealed on the corpse by dissection, the description of diseases, and therefore therapeutics took a quite new direction' [41].

But we must not lose sight of the essential. The tactile and auditory dimensions were not simply added to the domain of vision. The sensorial triangulation indispensable to anatomo-clinical perception remains under the dominant sign of the visible: first, because this multi-sensorial perception is merely a way of anticipating the triumph of the gaze that is represented by the autopsy; and ear and hand are merely temporary, substitute organs until such time as death brings to truth the luminous presence of the visible; it is a question of a mapping in life, that is, in *night,* in order to indicate how things would be in the white brightness of death. And above all, the alterations discovered by anatomy concern 'the shape, the size, the position, and the direction' of organs or of their tissues [42]: that is, spatial data that belong by right of origin to the gaze. When Laënnec speaks of alterations of structure, it is never a question of what is beyond the visible, or even of what would be perceptible to a delicate touch, but of solutions of continuity, accumulations of liquids, abnormal increases, or inflammations indicated by the swelling and redness of the tissue [43]. In any case, the absolute limit and the depth of perceptual exploration are always outlined by the clear plane of an at least potential visibility. 'They are painting a picture', says Bichat of the anatomists, 'rather than learning things. They must see rather than meditate' [44]. When Corvisart hears a heart that functions badly or Laënnec a voice that trembles, what they see with that gaze that secretly haunts their hearing and, beyond it, animates it, is a hypertrophy, a discharge.

Thus, from the discovery of pathological anatomy, the medical gaze is duplicated: there is a local, circumscribed gaze, the borderline gaze of touch and hearing, which covers only one of the sensorial fields, and which operates on little more than the visible surfaces. But there is also an absolute, absolutely integrating gaze that dominates and founds all perceptual experiences. It is this gaze that structures into a sovereign unity that which belongs to a lower level of the eye, the ear, and the sense of touch. When the doctor observes, with all his senses open, another eye is directed upon the fundamental visibility of things, and, through the transparent datum of life with which the particular senses are forced to work, he addresses himself fairly and squarely to the bright solidity of death.

The structure, at once perceptual and epistemological, that commands clinical anatomy, and all medicine that derives from it, is

that of *invisible visibility*. Truth, which, by right of nature, is made for the eye, is taken from her, but at once surreptitiously revealed by that which tries to evade it. Knowledge *develops* in accordance with a whole interplay of *envelopes;* the hidden element takes on the form and rhythm of the hidden content, which means that, like a *veil,* it is *transparent* [45]: the aim of the anatomists 'is attained when the opaque envelopes that cover our parts are no more for their practised eyes than a transparent veil revealing the whole and the relations between the parts' [46]. The individual senses lie in wait through these envelopes, try to circumvent them or lift them up; their lively curiosity invents innumerable means, including even making shameless use of the sense of shame (witness the stethoscope). But the absolute eye of knowledge has already confiscated, and re-absorbed into its geometry of lines, surfaces, and volumes, raucous or shrill voices, whistlings, palpitations, rough, tender skin, cries—a suzerainty of the visible, and one all the more imperious in that it associates with it power and death. That which hides and envelops, the curtain of night over truth, is, paradoxically, life; and death, on the contrary, opens up to the light of day the black coffer of the body: obscure life, limpid death, the oldest imaginary values of the Western world are crossed here in a strange misconstruction that is the very meaning of pathological anatomy if one agrees to treat it as a fact of civilization of the same order as—and why not?—the transformation from an incinerating to an inhuming culture. Nineteenth-century medicine was haunted by that absolute eye that cadaverizes life and rediscovers in the corpse the frail, broken nervure of life.

In former times, doctors communicated with death by means of the great myth of immortality or at least of the gradually receding limits of existence [47]. Now, these men who watch over men's lives communicate with their death in the fine, rigorous form of the gaze.

However, this projection of illness onto the plane of absolute visibility gives medical experience an opaque base beyond which it can no longer go. That which is not on the scale of the gaze falls outside the domain of possible knowledge. Hence the rejection of a number of scientific techniques that were nonetheless used by doctors in earlier years. Bichat even refused to use the microscope: 'when one looks into darkness everyone sees in his own way' [48]. The only type of visibility recognized by pathological anatomy is that defined by everyday vision: a *de jure* visibility that envelops in

temporary invisibility an opaque transparency, and not (as in microscopic investigation) a *de natura* invisibility that is breached for a time by an artificially multiplied technique of the gaze. In a way that seems strange to us, but that was structurally necessary, the analysis of pathological tissues dispensed, over a period of several years, with even the most ancient instruments of optics.

Still more significant is the rejection of chemistry. Analysis, as practised by Lavoisier, served as an epistemological model for the new anatomy [49], but it did not function as a technical extension of his gaze. In eighteenth-century medicine there was no dearth of experimental ideas; when one wanted to know what inflammatory fever consisted of, one carried out blood analyses: the average weight of the coagulated mass was compared with that of 'the lymph that separates from it'; distillations were made, and measurements were taken of the masses of fixed and volatile salt, oil, and earth to be found in a patient and in a healthy subject [50]. At the beginning of the nineteenth century, this experimental apparatus disappeared, and the only remaining technical problem was to know whether the opening up of the corpse of the patient affected by inflammatory fever would or would not reveal visible alterations. 'In order to characterize a morbid lesion,' Laënnec explains, 'it is usually enough to describe its physical or perceptible characteristics, and to indicate the course it takes in its development and in its terminations'; at most, one has time to use certain 'chemical reactions' only if they are very simple and intended to 'reveal certain physical characteristics': thus one may heat a liver, or pour an acid onto a degenerescence of which one is not sure whether it is fatty or albuminous [51].

Alone, the gaze dominates the entire field of possible knowledge; the intervention of techniques presenting problems of measurement, substance, or composition at the level of invisible structures is rejected. Analysis is not carried out in the sense of an indefinite descent towards the finest configurations, ultimately to those of the inorganic; in that direction, it soon comes up against the absolute limit laid down for it by the gaze, and from there, taking the perpendicular, it slides sideways towards the differentiation of individual qualities. On the line on which the visible is ready to be resolved into the invisible, on that crest of its disappearance, singularities come into play. A discourse on the individual is once more possible, or, rather, necessary, because it is the only way in

which the gaze can avoid renouncing itself, effacing itself in the figures of experience, in which it would be disarmed. The principle of visibility has its correlative in the differential reading of cases.

The process of such a reading is very different from clinical experience in its earliest form. The analytical method would consider the case only in its function as a semantic support; the forms of coexistence or of the series in which it was caught up made it possible to annul in it whatever was accidental or variable; its legible structure appeared only in the neutralization of what was not essential. The clinic was a science of cases to the extent that it proceeded initially to the diminution of individualities. In the anatomic method, individual perception is given at the term of a spatial quadrilateral of which it constitutes the finest, most differentiated structure, and, paradoxically, the one most open to the accidental, while at the same time being the most explanatory. Laënnec observes a woman who presents the typical symptoms of a heart affection: pale, puffy face, purple lips, infiltrated lower extremities, short, accelerated, panting breathing, coughing fits, inability to lie down. The opening up of the corpse shows pulmonary phthisis with concretionary cavities, and tubercles yellowish at the centre, grey and transparent around the circumference. The heart was in an almost natural state (except for the right auricle, which was very distended). But the left lung adhered to the pleura by a cellulous wrinkle, and was covered with irregular, convergent stripes in that area; the top of the lung presented fairly broad, crossed strips [52]. This particular kind of tuberculous lesion accounted for the impeded, rather suffocated, breathing and the circulatory alterations, which gave the clinical picture of a distinctly cardiac appearance. For the first time, the anatomo-clinical method integrates into the structure of the illness the constant possibility of an individual modulation. This possibility existed, of course, in earlier medicine: but it was conceived only in the abstract form of the subject's temperament, or of influences due to the environment, or of therapeutic interventions intended to alter a pathological type from the outside. In anatomical perception, the disease is given only with a certain 'blurring'; it has, from the outset, a latitude of insertion, direction, intensity, and acceleration that forms its individual figure. This figure is not a deviation added to the pathological deviation; the disease is itself a perpetual deviation within its essentially deviant nature. Only individual illnesses exist: not because the individual

reacts upon his own illness, but because the action of the illness rightly unfolds in the form of individuality.

Hence the new turn given to medical language. It is no longer a question, by means of a bi-univocal placing in correspondence, of promoting the visible to the legible, and of turning it into the significative by means of the universality of a codified language; but, on the contrary, of opening words to a certain qualitative, ever more concrete, more individualized, more modelled refinement; the importance of colour, consistency, texture, a preference for metaphor rather than measurement (as big as..., of the size of a...); an appreciation of the ease or difficulty to be found in simple operations (tearing, crushing, pressing); the value of intersensorial qualities (smooth, greasy, bumpy); empirical comparisons and references to the everyday or normal (deeper than in the natural state, an intermediate sensation 'between that of a damp bladder half-filled with air that one squeezes between the fingers and the natural crepitation of a healthy pulmonary tissue') [53]. It is no longer a question of correlating a perceptual sector and a semantic element, but of bending language back entirely towards that region in which the perceived, in its singularity, runs the risk of eluding the form of the word and of becoming finally imperceptible because incapable of being said. To *discover,* therefore, will no longer be to *read* an essential coherence beneath a state of disorder, but to push a little farther back the foamy line of language, to make it encroach upon that sandy region that is still open to the clarity of perception but is already no longer so to everyday speech—to introduce language into that penumbra where the gaze is bereft of words. An arduous, delicate work; a work that *reveals,* as Laënnec revealed distinctly, outside the confused mass of scirrhi, the first cirrhotic liver in the history of medical perception. The extraordinary formal beauty of the text links, in a single movement, the internal work of a language in pursuit of perception with all the strength of its stylistic originality, and the conquest of a hitherto unperceived pathological individuality:

> The liver, reduced to a third of its volume, was, as it were, hidden in the region that it occupies; its external surface, slightly mammillated and emptied, was a yellowish grey in colour; when cut, it seemed to be made up entirely of a mass of small seeds, round or oval in shape, varying in size from a millet seed to a hemp seed. These seeds, which can be easily separated, left almost

> no gap between them in which one might be able to make out some remaining part of the real tissue of the liver; they were fawn or reddish-yellow in colour, verging in parts on the greenish; their fairly moist, opaque tissue was slack, rather than soft, to the touch, and when one squeezed the grains between one's fingers only a small part was crushed, the rest feeling like a piece of soft leather [54].

The figure of the visible invisible organizes anatomo-pathological perception. But, as one sees, in accordance with a reversible structure. It is a question of the *visible* that the living individuality, the intersection of symptoms, the organic depth, in fact, and for a time, render invisible, before the sovereign resumption of the anatomical gaze. But it is as much a question of this *invisible* of the individual modulations, whose extrication seemed impossible even to a clinician like Cabanis [55], and which the effort of an incisive, patient, eroding language offers at last to common light what is *visible* for all. Language and death have operated at every level of this experience, and in accordance with its whole density, only to offer at last to scientific perception what, for it, had remained for so long the visible invisible—the forbidden, imminent secret: the knowledge of the individual.

The individual is not the initial, most acute form in which life is presented. It was given at last to knowledge only at the end of a long movement of spatialization whose decisive instruments were a certain use of language and a difficult conceptualization of death. Bergson is strictly in error when he seeks in time and against space, in a silent grasp of the internal, in a mad ride towards immortality, the conditions with which it is possible to conceive of the living individuality. Bichat, a century earlier, gave a more severe lesson. The old Aristotelian law, which prohibited the application of scientific discourse to the individual, was lifted when, in language, death found the locus of its concept: space then opened up to the gaze the differentiated form of the individual.

According to the order of historical correspondences, this introduction of death into knowledge goes very far: the late eighteenth century rediscovered a theme that had lain in obscurity since the Renaissance. To see death in life, immobility in its change, skeletal, fixed space beneath its smile, and, at the end of its time, the beginning of a reversed time swarming with innumerable lives, is the structure of a Baroque experience whose re-appearance was attested

by the previous century four hundred years after the frescoes of Campo Santo. Is not Bichat, in fact, the contemporary of the man who suddenly, in the most discursive of languages, introduced eroticism and its most inevitable point, death? Once more, knowledge and eroticism denounce, in this coincidence, their profound kinship. Throughout the latter years of the eighteenth century, this kinship opened up death to the task, to the infinitely repeated attempts of language. The nineteenth century will speak obstinately of death: the savage, castrated death of Goya, the visible, muscular, sculptural death offered by Géricault, the voluptuous death by fire in Delacroix, the Lamartinian death of aquatic effusions, Baudelaire's death. To know life is given only to that derisory, reductive, and already infernal knowledge that only wishes it dead. The Gaze that envelops, caresses, details, atomizes the most individual flesh and enumerates its secret bites is that fixed, attentive, rather dilated gaze which, from the height of death, has already condemned life.

But the perception of death in life does not have the same function in the nineteenth century as at the Renaissance. Then it carried with it reductive significations: differences of fate, fortune, conditions were effaced by its universal gesture; it drew each irrevocably to all; the dances of skeletons depicted, on the underside of life, a sort of egalitarian saturnalia; death unfailingly compensated for fortune. Now, on the contrary, it is constitutive of singularity; it is in that perception of death that the individual finds himself, escaping from a monotonous, average life; in the slow, half-subterranean, but already visible approach of death, the dull, common life becomes an individuality at last; a black border isolates it and gives it the style of its own truth. Hence the importance of the Morbid. The *macabre* implied a homogeneous perception of death, once its threshold had been crossed. The *morbid* authorizes a subtle perception of the way in which life finds in death its most differentiated figure. The morbid is the *rarefied* form of life, exhausted, working itself into the void of death; but also in another sense, that in death it takes on its peculiar volume, irreducible to conformities and customs, to received necessities; a *singular* volume defined by its absolute rarity. The privilege of the consumptive: in earlier times, one contracted leprosy against a background of great waves of collective punishment; in the nineteenth century, a man, in becoming tubercular, in the fever that hastens things and betrays

them, fulfills his incommunicable secret. That is why chest diseases are of exactly the same nature as diseases of love: they are the Passion, a life to which death gives a face that cannot be exchanged.

Death left its old tragic heaven and became the lyrical core of man: his invisible truth, his visible secret.

NOTES

[1] Roederer and Wagler, *Tractatus de morbo mucoso* (Göttingen, 1783).
[2] X.Bichat, *Anatomie générale,* avant-propos, vol. I, p. Ixxxv.
[3] X.Bichat, *Traité des membranes,* ed. Magendie, pp. 122–3.
[4] *Ibid.,* p. 101.
[5] Bichat, *Anatomie générale,* vol. I, avant-propos, p. xci.
[6] *Ibid.,* p. xcii.
[7] Corvisart, *Essai sur les maladies et les lésions organiques du cœur et des gros vaisseaux.*
[8] G.-L.Bayle, *Recherches sur la phtisie pulmonaire,* pp. 13–14.
[9] Cf. above, p. 132.
[10] Article 'Anatomie pathologique', in *Bulletin de l'École de Médecine de Paris,* Year XIII, first issue, pp. 16–18.
[11] Bayle, *op. cit.,* p. 12.
[12] *Ibid.,* pp. 423–4.
[13] F.Lallemand, *Recherches anatomo-pathologiques sur l'encéphale et ses dépendances,* I, pp. 98–9.
[14] Bichat, *Anatomie générale,* vol. IV, p. 591.
[15] *Ibid.,* I, avant-propos, p. vii.
[16] F.-J.Broussais, *Histoire des phlegmasies chroniques* (Paris, 1808, vol. I, pp. 54–5).
[17] Cf., for example, Pinel, *Nosographie philosophique,* introduction, p. xi, or C.-L.Dumas, *Recueil de discours prononcés à la Faculté de Médecine de Montpellier* (Montpellier, 1820, pp. 22–3).
[18] Buffon, 'Histoire naturelle', *Oeuvres complètes* (Paris, 1848, vol. III, p. 311).
[19] Corvisart, *op. cit.,* pp. 636–7.
[20] *Ibid.,* p. 636, n. 1.
[21] Cf. *Bulletin des sciences médicales,* vol. V, 1810.
[22] J.Cruveilhier, *Anatomie pathologique* (Paris, 1816, vol. I, pp. 75–6).
[23] R.Laënnec, article on 'Dégénération', *Dictionnaire des Sciences médicales,* 1814, vol. VIII, pp. 201–7.
[24] R.Laënnec, Introduction and first chapter of *Traité inédit d'anatomie pathologique,* p. 52.
[25] Dupuytren, *Dissertation inaugurale sur quelques points d'anatomie,* Paris, Year XII, p. 21.
[26] Lallemand, *op. cit.,* I, pp. 88–9.
[27] Bayle, *op. cit.,* p. 5.

[28] Corvisart, *op. cit.,* discours, préliminaire, p. xvii.
[29] Cf. above, p. 93.
[30] Bayle, *op. cit.,* pp. 5–14.
[31] Laënnec, *Traité de l'auscultation mediate* (Paris, 1819, vol. I).
[32] A.-F.Chomel, *Elements de pathologie générale* (Paris, 1817, pp. 522–3).
[33] Menuret, *Nouveau traité du pouls* (Amsterdam, 1768, pp. ix-x).
[34] Bordeu, *Recherches sur le pouls* (Paris, 1771, vol. I, pp. 30–1).
[35] Corvisart, *op. cit.,* pp. 397–8.
[36] Auenbrugger, *Nouvelle méthode pour reconnoi^tre les maladies internes de la poitrine* (trans. Corvisart, Paris, 1808, p. 70).
[37] G.Zimmermann, *Traité de l'expérience en medicine* (Fr. trans., Paris, 1774, II, p. 8).
[38] F.-J.Double, *Séméiologie générale.*
[39] Laënnec, *op. cit.,* vol. I, pp. 7–8.
[40] A.-F.Chomel, *Éléments de pathologie générale* (Paris, 1817, pp. 30–1).
[41] Ch.Daremberg, *Histoire des sciences médicales* (Paris, 1870, II, p. 1066).
[42] X.Bichat, essay on Desault, *Oeuvres chirurgicales de Desault,* 1798, I, pp. 10 and 11.
[43] Laënnec, *Dictionnaire des sciences médicales,* vol. II, article on 'Anatomie pathologique', p. 52.
[44] Bichat, *op. cit.,* I, p. 11.
[45] This structure does not date from the beginning of the nineteenth century, far from it; in its general outline, it dominated the forms of knowledge and eroticism in Europe from the mid-eighteenth century onwards, and it prevailed until the end of the nineteenth century. I shall try to study it in a subsequent work.
[46] Bichat, *op. cit.,* I, p. 11.
[47] Cf., still at the end of the eighteenth century, a text like that of Hufeland, *Makrobiotik oder der Kunst das Leben zu verlängern* (Jena, 1796).
[48] X.Bichat, *Traité des membranes* (Paris, Year VIII, p. 321).
[49] Cf. above, Chapter 8.
[50] Experiments carried out by Langrish and Tabor, cited by Sauvages, *Nosologie méthodique,* vol. II, pp. 331–3.
[51] R.Laënnec, Introduction and first chapter, *Traité inédit d'anatomie pathologique* (Published by V.Cornil, Paris, 1884, pp. 16–17).
[52] R.Laënnec, *De l'auscultation mediate,* vol. I, pp. 72–6.
[53] *Ibid.,* p. 249.
[54] *Ibid.,* p. 368.
[55] Cf. above.