

Essay

The Social Organism (1860)

This essay was first published in The Westminster Review for January 1860 and was reprinted in Spencer's Essays: Scientific, Political and Speculative (London and New York, 1892, in three volumes).

Sir James Macintosh got great credit for the saying, that "constitutions are not made, but grow". In our day, the most significant thing about this saying is, that it was ever thought so significant. As from the surprise displayed by a man at some familiar fact, you may judge of his general culture; so from the admiration which an age accords to a new thought, its average degree of enlightenment may be inferred. That this apophthegm of Macintosh should have been quoted and requoted as it has, shows how profound has been the ignorance of social science. A small ray of truth has seemed brilliant, as a distant rushlight looks like a star in the surrounding darkness.

Such a conception could not, indeed, fail to be startling when let fall in the midst of a system of thought to which it was utterly alien. Universally in Macintosh's day, things were explained on the hypothesis of manufacture, rather than that of growth; as indeed they are, by the majority, in our own day. It was held that the planets were severally projected round the Sun from the Creator's hand, with just the velocity required to balance the Sun's attraction. The formation of the Earth, the separation of sea from land, the production of animals, were mechanical works from which God rested as a labourer rests. Man was supposed to be moulded after a manner somewhat akin to that in which a modeller makes a clay-figure. And of course, in harmony with such ideas, societies were tacitly assumed to be arranged thus or thus by direct interposition of Providence; or by the regulations of law-makers; or by both.

Yet that societies are not artificially put together, is a truth so manifest, that it seems wonderful men should ever have overlooked it. Perhaps nothing more clearly shows the small value of historical studies, as they have been commonly pursued. You need but to look at the changes going on around, or observe social organization in its leading traits, to see that these are neither supernatural, nor are determined by the wills of individual men, as by implication the older historians teach; but are consequent on general natural causes. The one case of the division of labour suffices to prove this. It has not been by command of any ruler that some men have become manufacturers, while others have remained cultivators of the soil. In Lancashire, millions have devoted themselves to the making of cotton-fabrics; in Yorkshire, another million lives by producing woollens; and the pottery of Staffordshire, the cutlery of Sheffield, the hardware of Birmingham, severally occupy their hundreds of thousands. These are large facts in the structure of English society; but we can ascribe them neither to miracle, nor to legislation. It is not by "the hero as king," any more than by "collective wisdom," that men have been segregated into producers, wholesale distributors, and retail distributors. Our industrial organization, from its main outlines down to its minutest details, has become what it is, not simply without legislative guidance, but, to a considerable extent, in spite of legislative hindrances. It has arisen under the pressure of human wants and resulting activities. While each citizen has been pursuing his individual welfare, and none taking thought about division of labour, or conscious of the need of it, division of labour has yet been ever becoming more complete. It has been doing this slowly and silently: few having observed it until quite modern times. By steps so small, that year after year the industrial arrangements have seemed just what they were before—by changes as insensible as those through which a seed passes into a tree; society has become the complex

body of mutually-dependent workers we now see. And this economic organization, mark, is the all-essential organization. Through the combination thus spontaneously evolved, every citizen is supplied with daily necessities; while he yields some product or aid to others. That we are severally alive today, we owe to the regular working of this combination during the past week; and could it be suddenly abolished, multitudes would be dead before another week ended. If these most conspicuous and vital arrangements of our social structure have arisen not by the devising of any one, but through the individual efforts of citizens to satisfy their own wants; we may be tolerably certain that the less important arrangements have similarly arisen.

"But surely," it will be said, "the social changes directly produced by law, cannot be classed as spontaneous growths. When parliaments or kings order this or that thing to be done, and appoint officials to do it, the process is clearly artificial; and society to this extent becomes a manufacture rather than a growth." No, not even these changes are exceptions, if they be real and permanent changes. The true sources of such changes lie deeper than the acts of legislators. To take first the simplest instance. We all know that the enactments of representative governments ultimately depend on the national will: they may for a time be out of harmony with it, but eventually they must conform to it. And to say that the national will finally determines them, is to say that they result from the average of individual desires; or, in other words—from the average of individual natures. A law so initiated, therefore, really grows out of the popular character. In the case of a Government representing a dominant class, the same thing holds, though not so manifestly. For the very existence of a class monopolizing all power, is due to certain sentiments in the commonalty. Without the feeling of loyalty on the part of retainers, a feudal system could not exist. We see in the protest of the Highlanders against the abolition of heritable jurisdictions, that they preferred that kind of local rule. And if to the popular nature must be ascribed the growth of an irresponsible ruling class; then to the popular nature must be ascribed the social arrangements which that class creates in the pursuit of its own ends. Even where the Government is despotic, the doctrine still holds. The character of the people is, as before, the original source of this political form; and, as we have abundant proof, other forms suddenly created will not act, but rapidly retrograde to the old form. Moreover, such regulations as a despot makes, if really operative, are so because of their fitness to the social state. His acts being very much swayed by general opinion—by precedent, by the feeling of his nobles, his priesthood, his army—are in part immediate results of the national character; and when they are out of harmony with the national character, they are soon practically abrogated. The failure of Cromwell permanently to establish a new social condition, and the rapid revival of suppressed institutions and practices after his death, show how powerless is a monarch to change the type of society he governs. He may disturb, he may retard, or he may aid the natural process of organization; but the general course of this process is beyond his control. Nay, more than this is true. Those who regard the histories of societies as the histories of their great men, and think that these great men shape the fates of their societies, overlook the truth that such great men are the products of their societies. Without certain antecedents—without a certain average national character, they neither could have been generated nor could have had the culture which formed them. If their society is to some extent remoulded by them, they were, both before and after birth, moulded by their society—were the results of all those influences which fostered the ancestral character they inherited, and gave their own early bias, their creed, morals, knowledge, aspirations. So that such social changes as are immediately traceable to individuals of unusual power, are still remotely traceable to the social causes which produced these individuals; and hence, from the highest point of view, such social changes also, are parts

of the general developmental process.

Thus that which is so obviously true of the industrial structure of society, is true of its whole structure. The fact that "constitutions are not made, but grow," is simply a fragment of the much larger fact, that under all its aspects and through all its ramifications, society is a growth and not a manufacture.

A perception that there exists some analogy between the body politic and a living individual body, was early reached; and has from time to time re-appeared in literature. But this perception was necessarily vague and more or less fanciful. In the absence of physiological science, and especially of those comprehensive generalizations which it has but lately reached, it was impossible to discern the real parallelisms.

The central idea of Plato's model Republic, is the correspondence between the parts of a society and the faculties of the human mind. Classifying these faculties under the heads of Reason, Will, and Passion, he classifies the members of his ideal society under what he regards as three analogous heads:—councillors, who are to exercise government; military or executive, who are to fulfil their behests; and the commonalty, bent on gain and selfish gratification. In other words, the ruler, the warrior, and the craftsman, are, according to him, the analogues of our reflective, volitional, and emotional powers. Now even were there truth in the implied assumption of a parallelism between the structure of a society and that of a man, this classification would be indefensible. It might more truly be contended that, as the military power obeys the commands of the Government, it is the Government which answers to the Will; while the military power is simply an agency set in motion by it. Or, again, it might be contended that whereas the Will is a product of predominant desires, to which the Reason serves merely as an eye, it is the craftsmen, who, according to the alleged analogy, ought to be the moving power of the warriors.

Hobbes sought to establish a still more definite parallelism: not, however, between a society and the human mind, but between a society and the human body. In the introduction to the work in which he develops this conception, he says:

For by art is created that great LEVIATHAN called a COMMONWEALTH, or STATE, in Latin CIVITAS, which is but an artificial man; though of greater stature and strength than the natural, for whose protection and defence it was intended, and in which the *sovereignty* is an artificial *soul*, as giving life and motion to the whole body; the *magistrates* and other *officers* of judicature and execution, artificial *joints*; *reward* and *punishment*, by which, fastened to the seat of the sovereignty, every joint and member is moved to perform his duty, are the *nerves*, that do the same in the body natural; the *wealth* and *riches* of all the particular members are the *strength*; *salus populi*, the *people's safety*, its *business*; *counsellors*, by whom all things needful for it to know are suggested unto it, are the *memory*; *equity* and *laws* an artificial *reason* and *will*; *concord*, *health*; *sedition*, *sickness*; and *civil war*, *death*.

And Hobbes carries this comparison so far as actually to give a drawing of the Leviathan—a vast human-shaped figure, whose body and limbs are made up of multitudes of men. Just noting that these different analogies asserted by Plato and Hobbes serve to cancel each other (being, as they are, so completely at variance), we may say that on the whole those of Hobbes are the more plausible. But they are full of inconsistencies. If the sovereignty is the *soul* of the body-politic, how can it be that magistrates, who are a kind of deputy-sovereigns, should be comparable to *joints*? Or, again, how can the three mental functions, memory, reason, and will, be

severally analogous, the first to counsellors, who are a class of public officers, and the other two to equity and laws, which are not classes of officers, but abstractions? Or, once more, if magistrates are the artificial joints of society, how can reward and punishment be its nerves? Its nerves must surely be some class of persons. Reward and punishment must in societies, as in individuals, be *conditions* of the nerves, and not the nerves themselves.

But the chief errors of these comparisons made by Plato and Hobbes, lie much deeper. Both thinkers assume that the organization of a society is comparable, not simply to the organization of a living body in general, but to the organization of the human body in particular. There is no warrant whatever for assuming this. It is in no way implied by the evidence; and is simply one of those fancies which we commonly find mixed up with the truths of early speculation. Still more erroneous are the two conceptions in this, that they construe a society as an artificial structure. Plato's model republic—his ideal of a healthful body-politic—is to be consciously put together by men, just as a watch might be; and Plato manifestly thinks of societies in general as thus originated. Quite specifically does Hobbes express a like view. "For by *art*," he says, "is created that great LEVIATHAN called a COMMONWEALTH." And he even goes so far as to compare the supposed social contract, from which a society suddenly originates, to the creation of a man by the divine fiat. Thus they both fall into the extreme inconsistency of considering a community as similar in structure to a human being, and yet as produced in the same way as an artificial mechanism—in nature, an organism; in history, a machine.

Notwithstanding errors, however, these speculations have considerable significance. That such likenesses, crudely as they are thought out, should have been alleged by Plato and Hobbes and others, is a reason for suspecting that *some* analogy exists. The untenableness of the particular parallelisms above instanced, is no ground for denying an essential parallelism; since early ideas are usually but vague adumbrations of the truth. Lacking the great generalizations of biology, it was, as we have said, impossible to trace out the real relations of social organizations to organizations of another order. We propose here to show what are the analogies which modern science discloses.

Let us set out by succinctly stating the points of similarity and the points of difference. Societies agree with individual organisms in four conspicuous peculiarities:

1. That commencing as small aggregations, they insensibly augment in mass: some of them eventually reaching ten thousand times what they originally were.
2. That while at first so simple in structure as to be considered structureless, they assume, in the course of their growth, a continually-increasing complexity of structure.
3. That though in their early, undeveloped states, there exists in them scarcely any mutual dependence of parts, their parts gradually acquire a mutual dependence; which becomes at last so great, that the activity and life of each part is made possible only by the activity and life of the rest.
4. That the life of a society is independent of, and far more prolonged than, the lives of any of its component units; who are severally born, grow, work, reproduce, and die, while the body-politic composed of them survives generation after generation, increasing in mass, in completeness of structure, and in functional activity.

These four parallelisms will appear the more significant the more we contemplate them. While the points specified, are points in which societies agree with individual organisms, they are also points in which

individual organisms agree with one another, and disagree with all things else. In the course of its existence, every plant and animal increases in mass, in a way not paralleled by inorganic objects: even such inorganic objects as crystals, which arise by growth, show us no such definite relation between growth and existence as organisms do. The orderly progress from simplicity to complexity, displayed by bodies-politic in common with living bodies, is a characteristic which distinguishes living bodies from the inanimate bodies amid which they move. That functional dependence of parts, which is scarcely more manifest in animals than in nations, has no counterpart elsewhere. And in no aggregate except an organic or a social one, is there a perpetual removal and replacement of parts, joined with a continued integrity of the whole. Moreover, societies and organisms are not only alike in these peculiarities, in which they are unlike all other things; but the highest societies, like the highest organisms, exhibit them in the greatest degree. We see that the lowest animals do not increase to anything like the sizes of the higher ones; and, similarly, we see that aboriginal societies are comparatively limited in their growths. In complexity, our large civilized nations as much exceed primitive savage tribes, as a mammal does a zoophyte. Simple communities, like simple creatures, have so little mutual dependence of parts, that mutilation or subdivision causes but little inconvenience; but from complex communities, as from complex creatures, you cannot remove any considerable organ without producing great disturbance or death of the rest. And in societies of low type, as in inferior animals, the life of the aggregate, often cut short by division or dissolution, exceeds in length the lives of the component units, very far less than in civilized communities and superior animals; which outlive many generations of their component units.

On the other hand, the leading differences between societies and individual organisms are these:

1. That societies have no specific external forms. This, however, is a point of contrast which loses much of its importance, when we remember that throughout the vegetal kingdom, as well as in some lower divisions of the animal kingdom, the forms are often very indefinite—definiteness being rather the exception than the rule: and that they are manifestly in part determined by surrounding physical circumstances, as the forms of societies are. If, too, it should eventually be shown, as we believe it will, that the form of every species of organism has resulted from the average play of the external forces to which it has been subject during its evolution as a species; then, that the external forms of societies should depend, as they do, on surrounding conditions, will be a further point of community.

2. That though the living tissue whereof an individual organism consists, forms a continuous mass, the living elements of a society do not form a continuous mass; but are more or less widely dispersed over some portion of the Earth's surface. This, which at first sight appears to be an absolute distinction, is one which yet to a great extent fades when we contemplate all the facts. For, in the lower divisions of the animal and vegetal kingdoms, there are types of organization much more nearly allied, in this respect, to the organization of a society, than might be supposed—types in which the living units essentially composing the mass, are dispersed through an inert substance, that can scarcely be called living in the full sense of the word. It is thus with some of the *Protococci* and with the *Nostocæ*, which exist as cells imbedded in a viscid matter. It is so, too, with the *Thalassicollæ*—bodies made up of differentiated parts, dispersed through an undifferentiated jelly. And throughout considerable portions of their bodies, some of the *Acalephæ* exhibit more or less this type of structure. Now this is very much the case with a society. For we must remember that though the men who make up a society are physically separate, and even scattered, yet the surface over which they are scattered is not one devoid of life, but is covered by life of

a lower order which ministers to their life. The vegetation which clothes a country makes possible the animal life in that country; and only through its animal and vegetal products can such a country support a society. Hence the members of the body-politic are not to be regarded as separated by intervals of dead space, but as diffused through a space occupied by life of a lower order. In our conception of a social organism, we must include all that lower organic existence on which human existence, and therefore social existence, depend. And when we do this, we see that the citizens who make up a community may be considered as highly vitalized units surrounded by substances of lower vitality, from which they draw their nutriment: much as in the cases above instanced.

3. The third difference is that while the ultimate living elements of an individual organism are mostly fixed in their relative positions, those of the social organism are capable of moving from place to place. But here, too, the disagreement is much less than would be supposed. For while citizens are locomotive in their private capacities, they are fixed in their public capacities. As farmers, manufacturers, or traders, men carry on their businesses at the same spots, often throughout their whole lives; and if they go away occasionally, they leave behind others to discharge their functions in their absence. Each great centre of production, each manufacturing town or district, continues always in the same place; and many of the firms in such town or district, are for generations carried on either by the descendants or successors of those who founded them. Just as in a living body, the cells that make up some important organ severally perform their functions for a time and then disappear, leaving others to supply their places; so, in each part of a society the organ remains, though the persons who compose it change. Thus, in social life, as in the life of an animal, the units as well as the larger agencies formed of them, are in the main stationary as respects the places where they discharge their duties and obtain their sustenance. And hence the power of individual locomotion does not practically affect the analogy.

4. The last and perhaps the most important distinction is, that while in the body of an animal only a special tissue is endowed with feeling, in a society all the members are endowed with feeling. Even this distinction, however, is not a complete one. For in some of the lowest animals, characterized by the absence of a nervous system, such sensitiveness as exists is possessed by all parts. It is only in the more organized forms that feeling is monopolized by one class of the vital elements. And we must remember that societies, too, are not without certain differentiation of this kind. Though the units of a community are all sensitive, they are so in unequal degrees. The classes engaged in laborious occupations are less susceptible, intellectually and emotionally, than the rest; and especially less so than the classes of highest mental culture. Still, we have here a tolerably decided contrast between bodies-politic and individual bodies; and it is one which we should keep constantly in view. For it reminds us that while, in individual bodies, the welfare of all other parts is rightly subservient to the welfare of the nervous system, whose pleasurable or painful activities make up the good or ill of life; in bodies-politic the same thing does not hold, or holds to but a very slight extent. It is well that the lives of all parts of an animal should be merged in the life of the whole, because the whole has a corporate consciousness capable of happiness or misery. But it is not so with a society; since its living units do not and cannot lose individual consciousness, and since the community as a whole has no corporate consciousness. This is an everlasting reason why the welfares of citizens cannot rightly be sacrificed to some supposed benefit of the State, and why, on the other hand, the State is to be maintained solely for the benefit of citizens. The corporate life must here be subservient to the lives of the parts, instead of the lives of the parts being subservient to the corporate life.

Such, then, are the points of analogy and the points of difference. May we not say that the points of difference serve but to bring into clearer

light the points of analogy? While comparison makes definite the obvious contrasts between organisms commonly so called, and the social organism, it shows that even these contrasts are not so decided as was to be expected. The indefiniteness of form, the discontinuity of the parts, and the universal sensitiveness, are not only peculiarities of the social organism which have to be stated with considerable qualifications; but they are peculiarities to which the inferior classes of animals present approximations. Thus we find but little to conflict with the all-important analogies. Societies slowly augment in mass; they progress in complexity of structure; at the same time their parts become more mutually dependent; their living units are removed and replaced without destroying their integrity; and the extents to which they display these peculiarities are proportionate to their vital activities. These are traits that societies have in common with organic bodies. And these traits in which they agree with organic bodies and disagree with all other things, entirely subordinate the minor distinctions: such distinctions being scarcely greater than those which separate one half of the organic kingdom from the other. The *principles* of organization are the same, and the differences are simply differences of application.

Here ending this general survey of the facts which justify the comparisons of a society with a living body, let us look at them in detail. We shall find that the parallelism becomes the more marked the more closely it is examined.

The lowest animal and vegetal forms—*Protozoa* and *Protophyta*—are chiefly inhabitants of the water. They are minute bodies, most of which are made individually visible only by the microscope. All of them are extremely simple in structure, and some of them, as the *Rhizopods*, almost structureless. Multiplying, as they ordinarily do, by the spontaneous division of their bodies, they produce halves which may either become quite separate and move away in different directions, or may continue attached. By the repetition of this process of fission, aggregations of various sizes and kinds are formed. Among the *Protophyta* we have some classes, as the *Diatomaceæ* and the Yeast-plant, in which the individuals may be either separate or attached in groups of two, three, four, or more; other classes in which a considerable number of cells are united into a thread (*Conferva*, *Monilia*); others in which they form a network (*Hydrodictyon*); others in which they form plates (*Ulva*); and others in which they form masses (*Laminaria*, *Agaricus*): all which vegetal forms, having no distinction of root, stem, or leaf, are called *Thallogens*. Among the *Protozoa* we find parallel facts. Immense numbers of *Amæba*-like creatures, massed together in a framework of horny fibres, constitute Sponge. In the *Foraminifera* we see smaller groups of such creatures arranged into more definite shapes. Not only do these almost structureless *Protozoa* unite into regular or irregular aggregations of various sizes, but among some of the more organized ones, as the *Vorticellæ*, there are also produced clusters of individuals united to a common stem. But these little societies of monads, of cells, or whatever else we may call them, are societies only in the lowest sense: there is no subordination of parts among them—no organization. Each of the component units lives by and for itself; neither giving nor receiving aid. The only mutual dependence is that consequent on mechanical union.

Do we not here discern analogies to the first stages of human societies? Among the lowest races, as the Bushmen, we find but incipient aggregation: sometimes single families sometimes two or three families wandering about together. The number of associated units is small and variable, and their union inconstant. No division of labour exists except between the sexes, and the only kind of mutual aid is that of joint attack

or defence. We see an undifferentiated group of individuals, forming the germ of a society; just as in the homogeneous groups of cells above described, we see the initial stage of animal and vegetal organization.

The comparison may now be carried a step higher. In the vegetal kingdom we pass from the *Thallogens*, consisting of mere masses of similar cells, to the *Acrogens*, in which the cells are not similar throughout the whole mass; but are here aggregated into a structure serving as leaf and there into a structure serving as root; thus forming a whole in which there is a certain subdivision of functions among the units, and therefore a certain mutual dependence. In the animal kingdom we find analogous progress. From mere unorganized groups of cells, or cell-like bodies, we ascend to groups of such cells arranged into parts that have different duties. The common Polype, from the substance of which may be separated cells that exhibit, when detached, appearances and movements like those of a solitary *Amæba*, illustrates this stage. The component units, though still showing great community of character, assume somewhat diverse functions in the skin, in the internal surface, and in the tentacles. There is a certain amount of "physiological division of labour."

Turning to societies, we find these stages paralleled in most aboriginal tribes. When, instead of such small variable groups as are formed by Bushmen, we come to the larger and more permanent groups formed by savages not quite so low, we find traces of social structure. Though industrial organization scarcely shows itself, except in the different occupations of the sexes; yet there is more or less of governmental organization. While all the men are warriors and hunters, only a part of them are included in the council of chiefs; and in this council of chiefs some one has commonly supreme authority. There is thus a certain distinction of classes and powers; and through this slight specialization of functions is effected a rude cooperation among the increasing mass of individuals, whenever the society has to act in its corporate capacity. Beyond this analogy in the slight extent to which organization is carried, there is analogy in the indefiniteness of the organization. In the *Hydra*, the respective parts of the creature's substance have many functions in common. They are all contractile; omitting the tentacles, the whole of the external surface can give origin to young *hydræ*; and, when turned inside out, stomach performs the duties of skin and skin the duties of stomach. In aboriginal societies such differentiations as exist are similarly imperfect. Notwithstanding distinctions of rank, all persons maintain themselves by their own exertions. Not only do the head men of the tribe, in common with the rest, build their own huts, make their own weapons, kill their own food; but the chief does the like. Moreover, such governmental organization as exists is inconstant. It is frequently changed by violence or treachery, and the function of ruling assumed by some other warrior. Thus between the rudest societies and some of the lowest forms of animal life, there is analogy alike in the slight extent to which organization is carried, in the indefiniteness of this organization, and in its want of fixity.

A further complication of the analogy is at hand. From the aggregation of units into organized groups, we pass to the multiplication of such groups, and their coalescence into compound groups. The *Hydra*, when it has reached a certain bulk, puts forth from its surface a bud which, growing and gradually assuming the form of the parent, finally becomes detached; and by this process of gemmation the creature peoples the adjacent water with others like itself. A parallel process is seen in the multiplication of those lowly-organized tribes above described. When one of them has increased to a size that is either too great for coordination under so rude a structure, or else that is greater than the surrounding country can supply with game and other wild food, there arises a tendency to divide; and as in such communities there often occur quarrels, jealousies, and other causes of division, there soon comes an occasion on which a part of the

tribe separates under the leadership of some subordinate chief and migrates. This process being from time to time repeated, an extensive region is at length occupied by numerous tribes descended from a common ancestry. The analogy by no means ends here. Though in the common *Hydra* the young ones that bud out from the parent soon become detached and independent; yet throughout the rest of the class *Hydrozoa*, to which this creature belongs, the like does not generally happen. The successive individuals thus developed continue attached; give origin to other such individuals which also continue attached; and so there results a compound animal. As in the *Hydra* itself we find an aggregation of units which, considered separately, are akin to the lowest *Protozoa*; so here, in a *Zoophyte*, we find an aggregation of such aggregations. The like is also seen throughout the extensive family of *Polyzoa* or *Molluscoida*. The Ascidian Mollusks, too, in their many forms, show us the same thing: exhibiting, at the same time, various degrees of union among the component individuals. For while in the *Salpæ* the component individuals adhere so slightly that a blow on the vessel of water in which they are floating will separate them; in the *Botryllidæ* there exist vascular connexions among them, and a common circulation. Now in these different stages of aggregation, may we not see paralleled the union of groups of connate tribes into nations? Though, in regions where circumstances permit, the tribes descended from some original tribe migrate in all directions, and become far removed and quite separate; yet, where the territory presents barriers to distant migration, this does not happen: the small kindred communities are held in closer contact, and eventually become more or less united into a nation. The contrast between the tribes of American Indians and the Scottish clans, illustrates this. And a glance at our own early history, or the early histories of continental nations, shows this fusion of small simple communities taking place in various ways and to various extents. As says M. Guizot, in his *History of the Origin of Representative Government*:

By degrees, in the midst of the chaos of the rising society, small aggregations are formed which feel the want of alliance and union with each other. ... Soon inequality of strength is displayed among neighbouring aggregations. The strong tend to subjugate the weak, and usurp at first the rights of taxation and military service. Thus political authority leaves the aggregations which first instituted it, to take a wider range.

That is to say, the small tribes, clans, or feudal groups, sprung mostly from a common stock, and long held in contact as occupants of adjacent lands, gradually get united in other ways than by kinship and proximity.

A further series of changes begins now to take place, to which, as before, we find analogies in individual organisms. Returning to the *Hydrozoa*, we observe that in the simplest of the compound forms the connected individuals are alike in structure, and perform like functions; with the exception that here and there a bud, instead of developing into a stomach, mouth, and tentacles, becomes an egg-sac. But with the oceanic *Hydrozoa* this is by no means the case. In the *Calycophoridæ* some of the polypes growing from the common germ, become developed and modified into large, long, sack-like bodies, which, by their rhythmical contractions, move through the water, dragging the community of polypes after them. In the *Physophoridæ* a variety of organs similarly arise by transformation of the budding polypes; so that in creatures like the *Physalia*, commonly known as the "Portuguese Man-of-war," instead of that tree-like group of similar individuals forming the original type, we have a complex mass of unlike parts fulfilling unlike duties. As an individual *Hydra* may be regarded as a group of *Protozoa* which have become partially metamorphosed into different organs; so a *Physalia* is, morphologically considered, a group of *Hydræ* of which the individuals

have been variously transformed to fit them for various functions.

This differentiation upon differentiation is just what takes place during the evolution of a civilized society. We observed how, in the small communities first formed, there arises a simple political organization: there is a partial separation of classes having different duties. And now we have to observe how, in a nation formed by the fusion of such small communities, the several sections, at first alike in structures and modes of activity, grow unlike in both—gradually become mutually-dependent parts, diverse in their natures and functions.

The doctrine of the progressive division of labour, to which we are here introduced, is familiar to all readers. And further, the analogy between the economical division of labour and the "physiological division of labour," is so striking as long since to have drawn the attention of scientific naturalists: so striking, indeed, that the expression "physiological division of labour," has been suggested by it. It is not needful, therefore, to treat this part of the subject in great detail. We shall content ourselves with noting a few general and significant facts, not manifest on a first inspection.

Throughout the whole animal kingdom, from the *Cœlenterata* upwards, the first stage of evolution is the same. Equally in the germ of a polype and in the human ovum, the aggregated mass of cells out of which the creature is to arise, gives origin to a peripheral layer of cells, slightly differing from the rest which they include; and this layer subsequently divides into two—the inner, lying in contact with the included yelk, being called the mucous layer, and the outer, exposed to surrounding agencies, being called the serous layer: or, in the terms used by Prof. Huxley, in describing the development of the *Hydrozoa*—the endoderm and ectoderm. This primary division marks out a fundamental contrast of parts in the future organism. From the mucous layer, or endoderm, is developed the apparatus of nutrition; while from the serous layer, or ectoderm, is developed the apparatus of external action. Out of the one arise the organs by which food is prepared and absorbed, oxygen imbibed, and blood purified; while out of the other arise the nervous, muscular, and osseous systems, by the combined actions of which the movements of the body as a whole are effected. Though this is not a rigorously-correct distinction, seeing that some organs involve both of these primitive membranes, yet high authorities agree in stating it as a broad general distinction. Well, in the evolution of a society, we see a primary differentiation of analogous kind, which similarly underlies the whole future structure. As already pointed out, the only manifest contrast of parts in primitive societies, is that between the governing and the governed. In the least organized tribes, the council of chiefs may be a body of men distinguished simply by greater courage or experience. In more organized tribes, the chief-class is definitely separated from the lower class, and often regarded as different in nature—sometimes as god-descended. And later, we find these two becoming respectively freemen and slaves, or nobles and serfs. A glance at their respective functions, makes it obvious that the great divisions thus early formed, stand to each other in a relation similar to that in which the primary divisions of the embryo stand to each other. For, from its first appearance, the warrior-class, headed by chiefs, is that by which the external acts of the society are carried on: alike in war, in negotiation, and in migration. Afterwards, while this upper class grows distinct from the lower, and at the same time becomes more and more exclusively regulative and defensive in its functions, alike in the persons of kings and subordinate rulers, priests, and soldiers; the inferior class becomes more and more exclusively occupied in providing the necessaries of life for the community at large. From the soil, with which it comes in most direct contact, the mass of the

people takes up, and prepares for use, the food and such rude articles of manufacture as are known; while the overlying mass of superior men, maintained by the working population, deals with circumstances external to the community—circumstances with which, by position, it is more immediately concerned. Ceasing by-and-by to have any knowledge of, or power over, the concerns of the society as a whole, the serf-class becomes devoted to the processes of alimentation; while the noble class, ceasing to take any part in the processes of alimentation, becomes devoted to the coordinated movements of the entire body-politic.

Equally remarkable is a further analogy of like kind. After the mucous and serous layers of the embryo have separated, there presently arises between the two a third, known to physiologists as the vascular layer—a layer out of which are developed the chief blood-vessels. The mucous layer absorbs nutriment from the mass of yolk it encloses; this nutriment has to be transferred to the overlying serous layer, out of which the nervo-muscular system is being developed; and between the two arises a vascular system by which the transfer is effected—a system of vessels which continues ever after to be the transferrer of nutriment from the places where it is absorbed and prepared, to the places where it is needed for growth and repair. Well, may we not trace a parallel step in social progress? Between the governing and the governed, there at first exists no intermediate class; and even in some societies that have reached considerable sizes, there are scarcely any but the nobles and their kindred on the one hand, and the serfs on the other: the social structure being such that transfer of commodities takes place directly from slaves to their masters. But in societies of a higher type, there grows up, between these two primitive classes, another—the trading or middle class. Equally at first as now, we may see that, speaking generally, this middle class is the analogue of the middle layer in the embryo. For all traders are essentially distributors. Whether they be wholesale dealers, who collect into large masses the commodities of various producers; or whether they be retailers, who divide out to those who want them, the masses of commodities thus collected together; all mercantile men are agents of transfer from the places where things are produced to the places where they are consumed. Thus the distributing apparatus in a society, answers to the distributing apparatus in a living body; not only in its functions, but in its intermediate origin and subsequent position, and in the time of its appearance.

Without enumerating the minor differentiations which these three great classes afterwards undergo, we will merely note that throughout, they follow the same general law with the differentiations of an individual organism. In a society, as in a rudimentary animal, we have seen that the most general and broadly contrasted divisions are the first to make their appearance; and of the subdivisions it continues true in both cases, that they arise in the order of decreasing generality.

Let us observe, next, that in the one case as in the other, the specializations are at first very incomplete, and approach completeness as organization progresses. We saw that in primitive tribes, as in the simplest animals, there remains much community of function between the parts which are nominally different—that, for instance, the class of chiefs long remains industrially the same as the inferior class; just as in a *Hydra*, the property of contractility is possessed by the units of the endoderm as well as by those of the ectoderm. We noted also how, as the society advanced, the two great primitive classes partook less and less of each other's functions. And we have here to remark that all subsequent specializations are at first vague and gradually become distinct. "In the infancy of society," says M. Guizot, "everything is confused and uncertain; there is as yet no fixed and precise line of demarcation between the different powers in a state." "Originally kings lived like other landowners, on the incomes derived from their own private estates." Nobles were petty kings; and kings only the most powerful

nobles. Bishops were feudal lords and military leaders. The right of coining money was possessed by powerful subjects, and by the Church, as well as by the king. Every leading man exercised alike the functions of landowner, farmer, soldier, statesman, judge. Retainers were now soldiers, and now labourers, as the day required. But by degrees the Church has lost all civil jurisdiction; the State has exercised less and less control over religious teaching; the military class has grown a distinct one; handicrafts have concentrated in towns; and the spinning-wheels of scattered farmhouses, have disappeared before the machinery of manufacturing districts. Not only is all progress from the homogeneous to the heterogeneous, but, at the same time, it is from the indefinite to the definite.

Another fact which should not be passed over, is that in the evolution of a large society out of a cluster of small ones, there is a gradual obliteration of the original lines of separation—a change to which, also, we may see analogies in living bodies. The sub-kingdom *Annulosa*, furnishes good illustrations. Among the lower types the body consists of numerous segments that are alike in nearly every particular. Each has its external ring; its pair of legs, if the creature has legs; its equal portion of intestine, or else its separate stomach; its equal portion of the great blood-vessel, or, in some cases, its separate heart; its equal portion of the nervous cord; and, perhaps, its separate pair of ganglia. But in the highest types, as in the large *Crustacea*, many of the segments are completely fused together; and the internal organs are no longer uniformly repeated in all the segments. Now the segments of which nations at first consist, lose their separate external and internal structures in a similar manner. In feudal times the minor communities, governed by feudal lords, were severally organized in the same rude way, and were held together only by the fealty of their respective rulers to a suzerain. But along with the growth of a central power, the demarcations of these local communities become relatively unimportant, and their separate organizations merge into the general organization. The like is seen on a larger scale in the fusion of England, Wales, Scotland, and Ireland; and, on the Continent, in the coalescence of provinces into kingdoms. Even in the disappearance of law-made divisions, the process is analogous. Among the Anglo-Saxons, England was divided into tithings, hundreds, and counties: there were county-courts, courts of hundred, and courts of tithing. The courts of tithing disappeared first; then the courts of hundred, which have, however, left traces; while the county-jurisdiction still exists. Chiefly, however, it is to be noted, that there eventually grows up an organization which has no reference to these original divisions, but traverses them in various directions, as is the case in creatures belonging to the sub-kingdom just named; and, further, that in both cases it is the sustaining organization which thus traverses old boundaries, while, in both cases, it is the governmental, or coordinating organization in which the original boundaries continue traceable. Thus, in the highest *Annulosa* the exoskeleton and the muscular system never lose all traces of their primitive segmentation; but throughout a great part of the body, the contained viscera do not in the least conform to the external divisions. Similarly with a nation we see that while, for governmental purposes, such divisions as counties and parishes still exist, the structure developed for carrying on the nutrition of society wholly ignores these boundaries: our great cotton-manufacture spreads out of Lancashire into North Derbyshire; Leicestershire and Nottinghamshire have long divided the stocking-trade between them; one great centre for the production of iron and iron-goods, includes parts of Warwickshire, Staffordshire, and Worcestershire; and those various specializations of agriculture which have made different parts of England noted for different products, show no more respect to county-boundaries than do our growing towns to the boundaries of parishes.

If, after contemplating these analogies of structure, we inquire whether

there are any such analogies between the processes of organic change, the answer is—yes. The causes which lead to increase of bulk in any part of the body-politic, are of like nature with those which lead to increase of bulk in any part of an individual body. In both cases the antecedent is greater functional activity consequent on greater demand. Each limb, viscus, gland, or other member of an animal, is developed by exercise—by actively discharging the duties which the body at large requires of it; and similarly, any class of labourers or artisans, any manufacturing centre, or any official agency, begins to enlarge when the community devolves on it more work. In each case, too, growth has its conditions and its limits. That any organ in a living being may grow by exercise, there needs a due supply of blood. All action implies waste; blood brings the materials for repair; and before there can be growth, the quantity of blood supplied must be more than is requisite for repair. In a society it is the same. If to some district which elaborates for the community particular commodities—say the woollens of Yorkshire—there comes an augmented demand; and if, in fulfilment of this demand, a certain expenditure and wear of the manufacturing organization are incurred; and if, in payment for the extra quantity of woollens sent away, there comes back only such quantity of commodities as replaces the expenditure, and makes good the waste of life and machinery; there can clearly be no growth. That there may be growth, the commodities obtained in return must be more than sufficient for these ends; and just in proportion as the surplus is great will the growth be rapid. Whence it is manifest that what in commercial affairs we call *profit*, answers to the excess of nutrition over waste in a living body. Moreover, in both cases when the functional activity is high and the nutrition defective, there results not growth but decay. If in an animal, any organ is worked so hard that the channels which bring blood cannot furnish enough for repair, the organ dwindles: atrophy is set up. And if in the body-politic, some part has been stimulated into great productivity, and cannot afterwards get paid for all its produce, certain of its members become bankrupt, and it decreases in size.

One more parallelism to be here noted, is that the different parts of a social organism, like the different parts of an individual organism, compete for nutriment; and severally obtain more or less of it according as they are discharging more or less duty. If a man's brain be over-excited it abstracts blood from his viscera and stops digestion; or digestion, actively going on, so affects the circulation through the brain as to cause drowsiness; or great muscular exertion determines such a quantity of blood to the limbs as to arrest digestion or cerebral action, as the case may be. So, likewise, in a society, great activity in some one direction causes partial arrests of activity elsewhere by abstracting capital, that is commodities: as instance the way in which the sudden development of our railway-system hampered commercial operations; or the way in which the raising of a large military force temporarily stops the growth of leading industries.

The last few paragraphs introduce the next division of our subject. Almost unawares we have come upon the analogy which exists between the blood of a living body and the circulating mass of commodities in the body-politic. We have now to trace out this analogy from its simplest to its most complex manifestations.

In the lowest animals there exists no blood properly so called. Through the small assemblage of cells which make up a *Hydra*, permeate the juices absorbed from the food. There is no apparatus for elaborating a concentrated and purified nutriment, and distributing it among the component units; but these component units directly imbibe the unprepared nutriment, either from the digestive cavity or from one

another. May we not say that this is what takes place in an aboriginal tribe? All its members severally obtain for themselves the necessaries of life in their crude states; and severally prepare them for their own uses as well as they can. When there arises a decided differentiation between the governing and the governed, some amount of transfer begins between those inferior individuals who, as workers, come directly in contact with the products of the earth, and those superior ones who exercise the higher functions—a transfer parallel to that which accompanies the differentiation of the ectoderm from the endoderm. In the one case, as in the other, however, it is a transfer of products that are little if at all prepared; and takes place directly from the unity which obtains to the unit which consumes, without entering into any general current.

Passing to larger organisms—individual and social—we meet the first advance on this arrangement. Where, as among the compound *Hydrozoa*, there is a union of many such primitive groups as form *Hydræ*; or where, as in a *Medusa*, one of these groups has become of great size; there exist rude channels running throughout the substance of the body: not, however, channels for the conveyance of prepared nutriment, but mere prolongations of the digestive cavity, through which the crude chyle-aqueous fluid reaches the remoter parts, and is moved backwards and forwards by the creature's contractions. Do we not find in some of the more advanced primitive communities an analogous condition? When the men, partially or fully united into one society, become numerous—when, as usually happens, they cover a surface of country not everywhere alike in its products—when, more especially, there arise considerable classes which are not industrial; some process of exchange and distribution inevitably arises. Traversing here and there the earth's surface, covered by that vegetation on which human life depends, and in which, as we say, the units of a society are imbedded, there are formed indefinite paths, along which some of the necessaries of life occasionally pass, to be bartered for others which presently come back along the same channels. Note, however, that at first little else but crude commodities are thus transferred—fruits, fish, pigs or cattle, skins, etc.: there are few, if any, manufactured products or articles prepared for consumption. And note also, that such distribution of these unprepared necessaries of life as takes place, is but occasional—goes on with a certain slow, irregular rhythm.

Further progress in the elaboration and distribution of nutriment, or of commodities, is a necessary accompaniment of further differentiation of functions in the individual body or in the body-politic. As fast as each organ of a living animal becomes confined to a special action, it must become dependent on the rest for those materials which its position and duty do not permit it to obtain for itself; in the same way that, as fast as each particular class of a community becomes exclusively occupied in producing its own commodity, it must become dependent on the rest for the other commodities it needs. And, simultaneously, a more perfectly-elaborated blood will result from a highly specialized group of nutritive organs, severally adapted to prepare its different elements; in the same way that the stream of commodities circulating throughout a society, will be of superior quality in proportion to the greater division of labour among the workers. Observe, also, that in either case the circulating mass of nutritive materials, besides coming gradually to consist of better ingredients, also grows more complex. An increase in the number of the unlike organs which add to the blood their waste matters, and demand from it the different materials they severally need, implies a blood more heterogeneous in composition—an *a priori* conclusion which, according to Dr. Williams, is inductively confirmed by examination of the blood throughout the various grades of the animal kingdom. And similarly, it is manifest that as fast as the division of labour among the classes of a community becomes greater, there must be an increasing heterogeneity in the currents of merchandise flowing throughout that community.

The circulating mass of nutritive materials in individual organisms and in

social organisms, becoming at once better in the quality of its ingredients and more heterogeneous in composition, as the type of structure becomes higher, eventually has added to it in both cases another element, which is not itself nutritive but facilitates the processes of nutrition. We refer, in the case of the individual organism, to the blood-discs; and in the case of the social organism, to money. This analogy has been observed by Liebig, who in his *Familiar Letters on Chemistry* says:

Silver and gold have to perform in the organism of the state, the same function as the blood-corpuscles in the human organism. As these round discs, without themselves taking an immediate share in the nutritive process, are the medium, the essential condition of the change of matter, of the production of the heat and of the force by which the temperature of the body is kept up, and the motions of the blood and all the juices are determined, so has gold become the medium of all activity in the life of the state.

And blood-corpuscles being like coin in their functions, and in the fact that they are not consumed in nutrition, he further points out that the number of them which in a considerable interval flows through the great centres, is enormous when compared with their absolute number; just as the quantity of money which annually passes through the great mercantile centres, is enormous when compared with the quantity of money in the kingdom. Nor is this all. Liebig has omitted the significant circumstance that only at a certain stage of organization does this element of the circulation make its appearance. Throughout extensive divisions of the lower animals, the blood contains no corpuscles; and in societies of low civilization, there is no money.

Thus far we have considered the analogy between the blood in a living body and the consumable and circulating commodities in the body-politic. Let us now compare the appliances by which they are respectively distributed. We shall find in the developments of these appliances parallelisms not less remarkable than those above set forth. Already we have shown that, as classes, wholesale and retail distributors discharge in a society the office which the vascular system discharges in an individual creature; that they come into existence later than the other two great classes, as the vascular layer appears later than the mucous and serous layers; and that they occupy a like intermediate position. Here, however it remains to be pointed out that a complete conception of the circulating system in a society, includes not only the active human agents who propel the currents of commodities, and regulate their distribution, but includes, also, the channels of communication. It is the formation and arrangement of these to which we now direct attention.

Going back once more to those lower animals in which there is found nothing but a partial diffusion, not of blood, but only of crude nutritive fluids, it is to be remarked that the channels, through which the diffusion takes place, are mere excavations through the half-organized substance of the body: they have no lining membranes, but are mere *lacunæ* traversing a rude tissue. Now countries in which civilization is but commencing, display a like condition: there are no roads properly so called; but the wilderness of vegetal life covering the earth's surface is pierced by tracks, through which the distribution of crude commodities takes place. And while, in both cases, the acts of distribution occur only at long intervals (the currents, after a pause, now setting towards a general centre and now away from it), the transfer is in both cases slow and difficult. But among other accompaniments of progress, common to animals and societies, comes the formation of more definite and complete channels of communications. Blood-vessels acquire distinct walls; roads are fenced and gravelled. This advance is first seen in those roads or vessels that are nearest to the chief centres of distribution; while the peripheral roads and peripheral vessels long continue in their primitive states. At a yet later

stage of development, where comparative finish of structure is found throughout the system as well as near the chief centres, there remains in both cases the difference that the main channels are comparatively broad and straight, while the subordinate ones are narrow and tortuous in proportion to their remoteness. Lastly, it is to be remarked that there ultimately arise in the higher social organisms, as in the higher individual organisms, main channels of distribution still more distinguished by their perfect structures, their comparative straightness, and the absence of those small branches which the minor channels perpetually give off. And in railways we also see, for the first time in the social organism, a system of double channels conveying currents in opposite directions, as do the arteries and veins of a well-developed animal.

These parallelisms in the evolutions and structures of the circulating systems, introduce us to others in the kinds and rates of the movements going on through them. Through the lowest societies, as through the lowest creatures, the distribution of crude nutriment is by slow gurgitations and regurgitations. In creatures that have rude vascular systems, just as in societies that are beginning to have roads, there is no regular circulation along definite courses; but, instead, periodical changes of the currents—now towards this point and now towards that. Through each part of an inferior mollusc's body, the blood flows for a while in one direction, then stops and flows in the opposite direction; just as through a rudely-organized society, the distribution of merchandise is slowly carried on by great fairs, occurring in different localities, to and from which the currents periodically set. Only animals of tolerably complete organizations, like advanced communities, are permeated by constant currents that are definitely directed. In living bodies, the local and variable currents disappear when there grow up great centres of circulation, generating more powerful currents by a rhythm which ends in a quick, regular pulsation. And when in social bodies there arise great centres of commercial activity, producing and exchanging large quantities of commodities, the rapid and continuous streams drawn in and emitted by these centres subdue all minor and local circulations: the slow rhythm of fairs merges into the faster one of weekly markets, and in the chief centres of distribution, weekly markets merge into daily markets; while in place of the languid transfer from place to place, taking place at first weekly, then twice or thrice a week, we by-and-by get daily transfer, and finally transfer many times a day—the original sluggish, irregular rhythm, becomes a rapid, equable pulse. Mark, too, that in both cases the increased activity, like the greater perfection of structure, is much less conspicuous at the periphery of the vascular system. On main lines of railway, we have, perhaps, a score trains in each direction daily, going at from thirty to fifty miles an hour; as, through the great arteries, the blood moves rapidly in successive gushes. Along high roads, there go vehicles conveying men and commodities with much less, though still considerable, speed, and with a much less decided rhythm; as, in the smaller arteries, the speed of the blood is greatly diminished and the pulse less conspicuous. In parish-roads, narrower, less complete, and more tortuous, the rate of movement is further decreased and the rhythm scarcely traceable; as in the ultimate arteries. In those still more imperfect by-roads which lead from these parish-roads to scattered farmhouses and cottages, the motion is yet slower and very irregular; just as we find it in the capillaries. While along the field-roads, which, in their unformed, unfenced state, are typical of *lacunæ*, the movement is the slowest, the most irregular, and the most infrequent; as it is, not only in the primitive *lacunæ* of animals and societies, but as it is also in those *lacunæ* in which the vascular system ends among extensive families of inferior creatures.

Thus, then, we find between the distributing systems of living bodies and the distributing systems of bodies-politic, wonderfully close parallelisms. In the lowest forms of individual and social organisms, there exist neither prepared nutritive matters nor distributing appliances; and in both, these,

arising as necessary accompaniments of the differentiation of parts, approach perfection as this differentiation approaches completeness. In animals, as in societies, the distributing agencies begin to show themselves at the same relative periods, and in the same relative positions. In the one, as in the other, the nutritive materials circulated are at first crude and simple, gradually become better elaborated and more heterogeneous, and have eventually added to them a new element facilitating the nutritive processes. The channels of communication pass through similar phases of development, which bring them to analogous forms. And the directions, rhythms, and rates of circulation, progress by like steps to like final conditions.

We come at length to the nervous system. Having noticed the primary differentiation of societies into the governing and governed classes, and observed its analogy to the differentiation of the two primary tissues which respectively develop into organs of external action and organs of alimentation; having noticed some of the leading analogies between the development of industrial arrangements and that of the alimentary apparatus; and having, above, more fully traced the analogies between the distributing systems, social and individual; we have now to compare the appliances by which a society, as a whole, is regulated, with those by which the movements of an individual creature are regulated. We shall find here parallelisms equally striking with those already detailed.

The class out of which governmental organization originates, is, as we have said, analogous in its relations to the ectoderm of the lowest animals and of embryonic forms. And as this primitive membrane, out of which the nervo-muscular system is evolved, must, even in the first stage of its differentiation, be slightly distinguished from the rest by that greater impressibility and contractility characterizing the organs to which it gives rise; so, in that superior class which is eventually transformed into the directo-executive system of a society (its legislative and defensive appliances), does there exist in the beginning, a larger endowment of the capacities required for these higher social functions. Always, in rude assemblages of men, the strongest, most courageous, and most sagacious, become rulers and leaders; and, in a tribe of some standing, this results in the establishment of a dominant class, characterized on the average by those mental and bodily qualities which fit them for deliberation and vigorous combined action. Thus that greater impressibility and contractility, which in the rudest animal types characterize the units of the ectoderm, characterize also the units of the primitive social stratum which controls and fights; since impressibility and contractility are the respective roots of intelligence and strength.

Again, in the unmodified ectoderm, as we see it in the *Hydra*, the units are all endowed both with impressibility and contractility; but as we ascend to higher types of organization, the ectoderm differentiates into classes of units which divide those two functions between them: some, becoming exclusively impressible, cease to be contractile; while some, becoming exclusively contractile, cease to be impressible. Similarly with societies. In an aboriginal tribe, the directive and executive functions are diffused in a mingled form throughout the whole governing class. Each minor chief commands those under him, and, if need be, himself coerces them into obedience. The council of chiefs itself carries out on the battlefield its own decisions. The head chief not only makes laws, but administers justice with his own hands. In larger and more settled communities, however, the directive and executive agencies begin to grow distinct from each other. As fast as his duties accumulate, the head chief or king confines himself more and more to directing public affairs, and leaves the execution of his will to others: he deposes others to enforce submission, to inflict punishments, or to carry out minor acts of offence and defence; and only on occasions when, perhaps, the safety of the society and his own supremacy are at stake, does he begin to act as well as direct. As this differentiation establishes itself, the characteristics

of the ruler begin to change. No longer, as in an aboriginal tribe, the strongest and most daring man, the tendency is for him to become the man of greatest cunning, foresight, and skill in the management of others; for in societies that have advanced beyond the first stage, it is chiefly such qualities that insure success in gaining supreme power, and holding it against internal and external enemies. Thus that member of the governing class who comes to be the chief directing agent, and so plays the same part that a rudimentary nervous centre does in an unfolding organism, is usually one endowed with some superiorities of nervous organization.

In those larger and more complex communities possessing, perhaps, a separate military class, a priesthood, and dispersed masses of population requiring local control, there grow up subordinate governing agents; who, as their duties accumulate, severally become more directive and less executive in their characters. And when, as commonly happens, the king begins to collect round himself advisers who aid him by communicating information, preparing subjects for his judgment, and issuing his orders; we may say that the form of organization is comparable to one very general among inferior types of animals, in which there exists a chief ganglion with a few dispersed minor ganglia under its control.

The analogies between the evolution of governmental structures in societies, and the evolution of governmental structures in living bodies, are, however, more strikingly displayed during the formation of nations by coalescence of tribes—a process already shown to be, in several respects, parallel to the development of creatures that primarily consist of many like segments. Among other points of community between the successive rings which make up the body in the lower *Annulosa*, is the possession of similar pairs of ganglia. These pairs of ganglia, though connected by nerves, are very incompletely dependent on any general controlling power. Hence it results that when the body is cut in two, the hinder part continues to move forward under the propulsion of its numerous legs; and that when the chain of ganglia has been divided without severing the body, the hind limbs may be seen trying to propel the body in one direction while the fore limbs are trying to propel it in another. But in the higher *Annulosa*, called *Articulata*, sundry of the anterior pairs of ganglia, besides growing larger, unite in one mass; and this great cephalic ganglion having become the coordinator of all the creature's movements, there no longer exists much local independence. Now may we not in the growth of a consolidated kingdom out of petty sovereignties or baronies, observe analogous changes? Like the chiefs and primitive rulers above described, feudal lords, exercising supreme power over their respective groups of retainers, discharge functions analogous to those of rudimentary nervous centres. Among these local governing centres there is, in early feudal times, very little subordination. They are in frequent antagonism; they are individually restrained chiefly by the influence of parties in their own class; and they are but irregularly subject to that most powerful member of their order who has gained the position of head-suzerain or king. As the growth and organization of the society progresses, these local directive centres fall more and more under the control of a chief directive centre. Closer commercial union between the several segments is accompanied by closer governmental union; and these minor rulers end in being little more than agents who administer, in their several localities, the laws made by the supreme ruler: just as the local ganglia above described, eventually become agents which enforce, in their respective segments, the orders of the cephalic ganglion. The parallelism holds still further. We remarked above, when speaking of the rise of aboriginal kings, that in proportion as their territories increase, they are obliged not only to perform their executive functions by deputy, but also to gather round themselves advisers to aid in their directive functions; and that thus, in place of a solitary governing unit, there grows up a group of governing units, comparable to a ganglion consisting of

many cells. Let us here add that the advisers and chief officers who thus form the rudiment of a ministry, tend from the beginning to exercise some control over the ruler. By the information they give and the opinions they express, they sway his judgement and affect his commands. To this extent he is made a channel through which are communicated the directions originating with them; and in course of time, when the advice of ministers becomes the acknowledged source of his actions, the king assumes the character of an automatic centre, reflecting the impressions made on him from without.

Beyond this complication of governmental structure many societies do not progress; but in some, a further development takes place. Our own case best illustrates this further development and its further analogies. To kings and their ministries have been added, in England, other great directive centres, exercising a control which, at first small, has been gradually becoming predominant: as with the great governing ganglia which especially distinguish the highest classes of living beings. Strange as the assertion will be thought, our Houses of Parliament discharge, in the social economy, functions which are in sundry respects comparable to those discharged by the cerebral masses in a vertebrate animal. As it is in the nature of a single ganglion to be affected only by special stimuli from particular parts of the body; so it is in the nature of a single ruler to be swayed in his acts by exclusive personal or class interests. As it is in the nature of a cluster of ganglia, connected with the primary one, to convey to it a greater variety of influences from more numerous organs, and thus to make its acts conform to more numerous requirements; so it is in the nature of the subsidiary controlling powers surrounding a king to adapt his rule to a greater number of public exigencies. And as it is in the nature of those great and latest-developed ganglia which distinguish the higher animals, to interpret and combine the multiplied and varied impressions conveyed to them from all parts of the system, and to regulate the actions in such way as duly to regard them all; so it is in the nature of those great and latest-developed legislative bodies which distinguish the most advanced societies, to interpret and combine the wishes of all classes and localities, and to make laws in harmony with the general wants. We may describe the office of the 'brain as that of *averaging* the interests of life, physical, intellectual, moral; and a good brain is one in which the desires answering to these respective interests are so balanced, that the conduct they jointly dictate, sacrifices none of them. Similarly, we may describe the office of a Parliament as that of *averaging* the interests of the various classes in a community; and a good Parliament is one in which the parties answering to these respective interests are so balanced, that their united legislation allows to each class as much as consists with the claims of the rest. Besides being comparable in their duties, these great directive centres, social and individual, are comparable in the processes by which their duties are discharged. The cerebrum is not occupied with direct impressions from without but with the ideas of such impressions. Instead of the actual sensations produced in the body, and directly appreciated by the sensory ganglia, or primitive nervous centres, the cerebrum receives only the representations of these sensations; and its consciousness is called *representative* consciousness, to distinguish it from the original or *presentative* consciousness. Is it not significant that we have hit on the same word to distinguish the function of our House of Commons? We call it a *representative* body, because the interests with which it deals are not directly presented to it, but represented to it by its various members; and a debate is a conflict of representations of the results likely to follow from a proposed course—a description which applies with equal truth to a debate in the individual consciousness. In both cases, too, these great governing masses take no part in the executive functions. As, after a conflict in the cerebrum, those desires which finally predominate act on the subjacent ganglia, and through their instrumentality determine the bodily actions; so the parties

which, after a parliamentary struggle, gain the victory, do not themselves carry out their wishes, but get them carried out by the executive divisions of the Government. The fulfilment of all legislative decisions still devolves on the original directive centres: the impulse passing from the Parliament to the Ministers and from the Ministers to the King, in whose name everything is done; just as those smaller, first-developed ganglia, which in the lowest vertebrata are the chief controlling agents, are still, in the brains of the higher vertebrata, the agents through which the dictates of the cerebrum are worked out. Moreover, in both cases these original centres become increasingly automatic. In the developed vertebrate animal, they have little function beyond that of conveying impressions to, and executing the determinations of, the larger centres. In our highly organized government, the monarch has long been lapsing into a passive agent of Parliament; and now, ministries are rapidly falling into the same position. Nay, between the two cases there is a parallelism even in respect of the exceptions to this automatic action. For in the individual creature it happens that under circumstances of sudden alarm, as from a loud sound close at hand, an unexpected object starting up in front, or a slip from insecure footing, the danger is guarded against by some quick involuntary jump, or adjustment of the limbs, which occurs before there is time to consider the impending evil and take deliberate measures to avoid it: the rationale of which is that these violent impressions produced on the senses, are reflected from the sensory ganglia to the spinal cord and muscles, without, as in ordinary cases, first passing through the cerebrum. In like manner on national emergencies calling for prompt action, the King and Ministry, not having time to lay the matter before the great deliberative bodies, themselves issue commands for the requisite movements or precautions; the primitive, and now almost automatic, directive centres, resume for a moment their original uncontrolled power. And then, strangest of all, observe that in either case there is an after-process of approval or disapproval. The individual on recovering from his automatic start, at once contemplates the cause of his fright; and, according to the case, concludes that it was well he moved as he did, or condemns himself for his groundless alarm. In like manner, the deliberative powers of the State discuss, as soon as may be, the unauthorized acts of the executive powers; and, deciding that the reasons were or were not sufficient, grant or withhold a bill of indemnity.

Thus far in comparing the governmental organization of the body-politic with that of an individual body, we have considered only the respective co-ordinating centres. We have yet to consider the channels through which these co-ordinating centres receive information and convey commands. In the simplest societies, as in the simplest organisms, there is no "internuncial apparatus," as Hunter styled the nervous system. Consequently, impressions can be but slowly propagated from unit to unit throughout the whole mass. The same progress, however, which, in animal-organization, shows itself in the establishment of ganglia or directive centres, shows itself also in the establishment of nerve-threads, through which the ganglia receive and convey impressions and so control remote organs. And in societies the like eventually takes place. After a long period during which the directive centres communicate with various parts of the society through other means, there at last comes into existence an "internuncial apparatus," analogous to that found in individual bodies. The comparison of telegraph-wires to nerves is familiar to all. It applies, however, to an extent not commonly supposed. Thus, throughout the vertebrate sub-kingdom, the great nerve-bundles diverge from the vertebrate axis side by side with the great arteries; and similarly, our groups of telegraph-wires are carried along the sides of our railways. The most striking parallelism, however, remains. Into each great bundle of nerves, as it leaves the axis of the body along with an artery, there enters a branch of the sympathetic nerve; which branch, accompanying the artery throughout its ramifications, has the function of

regulating its diameter and otherwise controlling the flow of blood through it according to local requirements. Analogously, in the group of telegraph-wires running alongside each railway, there is a wire for the purpose of regulating the traffic—for retarding or expediting the flow of passengers and commodities, as the local conditions demand. Probably, when our now rudimentary telegraph-system is fully developed, other analogies will be traceable.

Such, then, is a general outline of the evidence which justifies the comparison of societies to living organisms. That they gradually increase in mass; that they become little by little more complex; that at the same time their parts grow more mutually dependent; and that they continue to live and grow as wholes, while successive generations of their units appear and disappear; are broad peculiarities which bodies-politic display in common with all living bodies; and in which they and living bodies differ from everything else. And on carrying out the comparison in detail, we find that these major analogies involve many minor analogies, far closer than might have been expected. Others might be added. We had hoped to say something respecting the different types of social organization, and something also on social metamorphoses; but we have reached our assigned limits.