ended in transforming these military leaders into kings over consolidated states.

As this differentiation by which there arises first a temporary and then a permanent military head, who passes insensibly into a political head, is initiated by conflict with adjacent societies, it naturally happens that his political power increases as military activity continues. Everywhere, providing extreme diffusion does not prevent, we find this connection between predatory activity and submission to despotic rule. Asia shows it in the Kirghiz tribes, who are slave hunters and robbers, and of whose manaps, once elective but now hereditary, the Michells say, "The word Manap literally means a tyrant, in the ancient Greek sense. It was at first the proper name of an elder distinguished for his cruelty and unrelenting spirit; from him the appellation became general to all Kirghiz rulers" [Valikhanov 1865, pp. 278–9]. Africa shows it in the cannibal Niam-niams, whose king is unlimited lord of persons and things [Schweinfurth 1873, II, 22] or again in the sanguinary Dahomeans with their Amazon army and in the warlike Ashantis, all trained to arms, both of them under governments so absolute that the highest officials are slaves to the king [Beecham 1841, p. 96]. Polynesia shows it in the ferocious Fijians, whose tribes are ever fighting with one another, and among whom loyalty to absolute rulers is the extremest imaginable – even so extreme that people of a slave district "said it was their duty to become food and sacrifices for the chiefs" [Erskine 1853, p. 464].

This relation between the degree of power in the political head and the degree of militancy, has, indeed, been made familiar to us in the histories of ancient and modern civilized races. The connection is implied in the Assyrian inscriptions as well as in the frescoes and papyri of Egypt. The case of Pausanias and other such cases were regarded by the Spartans themselves as showing the tendency of generals to become despots – as showing, that is, the tendency of active operations against adjacent societies to generate centralized political power. How the imperativeness fostered by continuous command of armies thus passes into political imperativeness has been again and again shown us in later histories.

Here, then, the induction we have to carry with us is that as in the individual organism that nervo-muscular apparatus which carries on conflict with environing organisms, begins with, and is developed by, that conflict, so the governmental-military organization of a society, is initiated by, and evolves along with, the warfare between societies. Or, to speak more strictly, there is thus evolved that part of its governmental organization which conduces to efficient cooperation against other societies.

The development of the regulating system may now be dealt with. Let us first trace the governmental agency through its stages of complication.

In small and little-differentiated aggregates, individual and social, the structure which coordinates does not become complex: neither the need for it nor the materials for forming and supporting it exist. But complexity begins in compound aggregates. In either case its commencement is seen in the rise of a superior coordinating center exercising control over inferior centers. Among animals the *Annulosa* illustrate this most clearly. In an annelid the like nervous structures of the like successive segments are but little subordinated to any chief ganglion or group of ganglia. But along with that evolution which, integrating and differentiating the segments, produces a higher annulose animal, there arise at the end which moves foremost, more developed senses and appendages for action, as well as a cluster of ganglia connected with them; and along with formation of this goes an increasing control exercised by it over the ganglia of the posterior segments. Not very strongly marked in such little-integrated types as centipedes, a nervous centralization of this kind becomes great in such integrated types as the higher crustaceans and the arachnida.

So is it in the progress from compound social aggregates that are loosely coherent to those that are consolidated. Manifestly, during those early stages in which the chief of a conquering tribe succeeds only in making the chiefs of adjacent tribes tributary while he lives, the political centralization is but slight, and hence, as in cases before referred to in Africa and elsewhere, the powers of the local centers re-assert themselves when they can throw off their temporary subordination. Many races which have got beyond the stage of separate simple tribes show us, along with various degrees of cohesion, various stages in the subjection of local governing centers to a general governing center. When first visited, the Hawaiian Islanders had a king with turbulent chiefs, formerly independent [Ellis 1826, p. 392], and in Tahiti there was similarly a monarch with secondary rulers but little subordinate [Forster 1778, p. 355]. So was it with the New Zealanders; and so was it with the Malagasy until a century since.

The nature of the political organization during such stages is shown us by the relative degrees of power which the general and special centers exercise over the people of each division. Thus of the Tahitians we read that the power of the chief was supreme in his own district, and greater than that of the king over the whole [Ellis 1829, II, 366–7]. Lichtenstein tells us of the Xosa that "they are all vassals of the king, chiefs, as well as those under them; but the subjects are generally so blindly attached to their chiefs, that they will follow them against the king" [1812–15, I, 286]. "Scarcely would the slave of an Ashanti chief," says Cruickshank, "obey the mandate of his king, without the special concurrence of his immediate master" [1853, II, 242]. And concerning the three grades of chiefs among the Araucanians, Thompson says of those who rule the smallest divisions that "their authority is less precarious" than that of the higher officers [1812,

I, 405]. These few instances, which might readily be multiplied, remind us of the relations between major and minor political centers in feudal times, when there were long periods during which the subjection of barons to kings was being established – during which failures of cohesion and re-assertions of local authority occurred – during which there was loyalty to the district ruler greater than that to the general ruler.

And now let us note deliberately what was before implied, that this subordination of local governing centers to a general governing center accompanies cooperation of the components of the compound aggregate in its conflicts with other like aggregates. Between such superior *Annulosa* as the winged insects and clawed crustaceans above described as having centralized nervous systems, and the inferior *Annulosa* composed of many similar segments with feeble limbs, the contrast is not only in the absence from these last of centralized nervous systems but also in the absence of offensive and defensive appliances of efficient kinds. In the high types, nervous subordination of the posterior segments to the anterior has accompanied the growth of those anterior appendages which preserve the aggregate of segments in its dealings with prey and enemies and this centralization of the nervous structure has resulted from the cooperation of these external organs.

It is thus also with the political centralizations which become permanent. So long as the subordination is established by internal conflict of the divisions with one another and hence involves antagonism among them, it remains unstable; but it tends towards stability in proportion as the regulating agents, major and minor, are habituated to combined action against external enemies. The recent changes in Germany have re-illustrated under our eyes this political centralization by combination in war, which was so abundantly illustrated in the Middle Ages by the rise of monarchical governments over numerous fiefs.

How this compound regulating agency for internal control results from combined external actions of the compound aggregate in war we may understand on remembering that at first the army and the nation are substantially the same. As in each primitive tribe the men are all warriors, so, during early stages of civilization the military body is co-extensive with the adult male population excluding only the slaves – co-extensive with all that part of the society which has political life. In fact the army is the nation mobilized, and the nation the quiescent army. Hence men who are local rulers while at home and leaders of their respective bands of dependents when fighting a common foe under direction of a general leader, become minor heads disciplined in subordination to the major head and as they carry more or less of this subordination home with them, the military organization developed during war survives as the political organization during peace.

preme centers growing out of them.

In a society it similarly happens that the political agency which gains predominance is gradually augmented and complicated by additional parts for additional functions. The chief of chiefs begins to require helpers in carrying on control. He gathers round him some who get information, some with whom he consults, some who execute his commands. No longer a governing unit, he becomes the nucleus in a cluster of governing units. Various stages in this compounding, proceeding generally from the temporary to the permanent, may be observed. In the Hawaiian Islands the king and governor have each a number of chiefs who attend on them and execute their orders [Ellis 1826, p. 402]. The Tahitian king had a prime minister, as well as a few chiefs to give advice [Ellis 1829, II, 363], and in Samoa, too, each village chief has a sort of prime minister [Turner 1861, p. 284].

Africa shows us stages in this progress from simple personal government to government through agents. Among the Beetjuans (a Bechuana people) the king executes "his own sentence, even when the criminal is condemned to death," and Lichtenstein [1812–15, II, 329, 298] tells us of another group of Bechuanas (the Maatjaping) that, his people being disorderly, the mon-

arch "swung his tremendous *sjambok* of rhinoceros leather, striking on all sides, till he fairly drove the whole multitude before him" being thereupon imitated by his courtiers. And then of the Bachapin government, belonging to this same race, we learn that the duty of the chief's brother "was to convey the chief's orders wherever the case demanded, and to see them put in execution" [Burchell 1822–24, II, 431]. Among the Xosa, governed by a king and vassal chiefs, every chief has councillors, and "the great council of the king is composed of the chiefs of particular kraals" [Lichtenstein 1812–15, I, 286]. Again, the Zulu sovereign shares his power with two soldiers of his choice, and these form the supreme judges of the country [Arboussett and Daumas 1846, p. 140].

The appendages which add to the size and complexity of the governing center in the larger African kingdoms are many and fully established. In Dahomey, besides two premiers and various functionaries surrounding the king, there are two judges, of whom one or other is "almost constantly with the king, informing him of every circumstance that passes" [Dalzel 1793, p. 121], and, according to Burton, every official is provided with a second in command, who is in reality a spy [1864, I, 53, 276]. Though the king joins in judging causes, and though when his executioners bungle he himself shows them how to cut off heads, yet he has agents around him into whose hands these functions are gradually lapsing, as, in the compound nervous structures above described, there are appended centers through which information is communicated, and appended centers through which the decisions pass into execution.

How in civilized nations analogous developments have taken place — how among ourselves William the Conqueror made his "justiciar" supreme administrator of law and finance, having under him a body of Secretaries of whom the chief was called Chancellor; how the justiciar became Prime Minister and his staff a supreme court, employed alike on financial and judicial affairs and in revision of laws; how this in course of time became specialized and complicated by appendages; needs not to be shown in detail [Stubbs 1870, pp. 16–7]. Always the central governing agency while being enlarged is made increasingly heterogeneous by the multiplication of parts having specialized functions. . . .

One further concomitant may be added. During evolution of the supreme regulating centers, individual and social, the older parts become relatively automatic. A simple ganglion with its afferent and efferent fibers receives stimuli and issues impulses unhelped and unchecked; but when there gather round it ganglia through which different kinds of impressions come to it, and others through which go from it impulses causing different motions, it becomes dependent on these, and in part an agent for transforming the sensory excitements of the first into the motor discharges of the last. As the supplementary parts multiply, and the impressions sent by them to

the original center, increasing in number and variety, involve multiplied *impulses* sent through the appended motor centers, this original center becomes more and more a channel through which, in an increasingly mechanical way, special stimuli lead to appropriate actions.

Take, for example, three stages in the vertebrate animal. We have first an almost uniform spinal cord, to the successive portions of which are joined the sensory and motor nerves supplying the successive portions of the body: the spinal cord is here the supreme regulator. Then in the nervous system of vertebrates somewhat more advanced, the medulla oblongata and the sensory ganglia at the anterior part of this spinal cord, taking a relatively large share in receiving those guiding impressions which lead to motor discharges from its posterior part, tend to make this subordinate and its actions mechanical: the sensory ganglia have now become the chief rulers. And when in the course of evolution the cerebrum and cerebellum grow, the sensory ganglia, with the coordinating motor center to which they were joined, lapse into mere receivers of stimuli and conveyers of impulses; the last-formed centers acquire supremacy, and those preceding them are their servants.

Thus is it with kings, ministries, and legislative bodies. As the original political head, acquiring larger functions, gathers agents around him who bring data for decisions and undertake execution of them, he falls more and more into the hands of these agents – has his judgments in great degree made for him by informers and advisers, and his deputed acts modified by executive officers: the ministry begins to rule through the original ruler. At a later stage the evolution of legislative bodies is followed by the subordination of ministries, who, holding their places by the support of majorities, are substantially the agents executing the wills of those majorities. And while the ministry is thus becoming less deliberative and more executive, as the monarch did previously, the monarch is becoming more automatic: royal functions are performed by commission, royal speeches are but nominally such, royal assents are practically matters of form. This general truth, which our own constitutional history so well illustrates, was illustrated in another way during the development of Athenian institutions, political, judicial, and administrative: the older classes of functionaries survived, but fell into subordinate positions, performing duties of a comparatively routine kind.

From the general structures of regulating systems, and from the structures of their great centers of control, we must now turn to the appliances through which control is exercised. For coordinating the actions of an aggregate, individual or social, there must be not only a governing center, but there must also be media of communication through which this center may affect the parts.

Ascending stages of animal organization carry us from types in which

this requirement is scarcely at all fulfilled, to types in which it is fulfilled effectually. Aggregates of very humble orders, as sponges, *Thallassicollae*, etc., without coordinating centers of any kind, are also without means of transferring impulses from part to part, and there is no cooperation of parts to meet an outer action. In *Hydrozoa* and *Actinozoa*, not possessing visible centers of coordination, slow adjustments result from the diffusion of molecular changes from part to part through the body: contraction of the whole creature presently follows rough handling of the tentacles, while contact of the tentacles with nutritive matter causes a gradual closing of them around it. Here, by the propagation of some influence among them, the parts are made to cooperate for the general good, feebly and sluggishly. In *Polyzoa*, along with the rise of distinct nerve centers, there is a rise of distinct nerve fibers, conveying impulses rapidly along definite lines, instead of slowly through the substance in general. Hence comes a relatively prompt cooperation of parts to deal with sudden external actions. And as these internuncial lines multiply, becoming at the same time well adjusted in their connections, they make possible those varied coordinations which developed nervous centers direct.

Analogous stages in social evolution are sufficiently manifest. Over a territory covered by groups devoid of political organization, news of an inroad spreads from person to person, taking long to diffuse over the whole area, and the inability of the scattered mass to cooperate is involved as much by the absence of internuncial agencies as by the absence of regulating centers. But along with such slight political coordination as union for defense produces, there arise appliances for influencing the actions of distant allies. Even the Fuegians light fires to communicate intelligence [Darwin 1839, p. 238]. The Tasmanians, too, made use of signal fires [Bonwick 1870, p. 21], as do the Tannese [Turner 1871, p. 326]; and this method of producing a vague coordination among the parts in certain emergencies is found among other uncivilized races.

As we advance, and as more definite combinations of more varied kinds have to be effected for offense and defense, messengers are employed. Among the Fijians, for instance, men are sent with news and commands, and use certain mnemonic aids [Wilkes 1845, III, 332]. The New Zealanders "occasionally conveyed information to distant tribes during war by marks on gourds" [Thomson 1859, I, 77]. In such comparatively advanced states as those of ancient America, this method of sending news was greatly developed. The Mexicans had couriers who at full speed ran six-mile stages, and so carried intelligence, it is said, even three hundred miles in a day [Clavigero 1787, I, 345], and the Peruvians, besides their fire and smoke signals in time of rebellion, had runners of the same kind [Garcilasso de la Vega 1869–71, II, 119–20]. So, too, was it with the Persians. Herodotus writes:

> Nothing mortal travels so fast as these Persian messengers. The entire plan is a Persian invention; and this is the method of it. Along the whole line of road there are men (they say) stationed with horses, and the message is borne from hand to hand along the whole line, like the light in the torch-race, which the Greeks celebrate to Vulcan [1858, IV, 344].

Thus what is in its early stage a slow propagation of impulses from unit to unit throughout a society, becomes, as we advance, a more rapid propagation along settled lines, so making quick and definitely-adjusted combinations possible. Moreover, we must note that this part of the regulating system, like its other parts, is initiated by the necessities of cooperation against alien societies. As in later times among Highland clans the fast runner, bearing the fiery cross, carried a command to arm, so, in early English times the messages were primarily those between rulers and their agents and habitually concerned military affairs. Save in these cases (and even state messengers could not move swiftly along the bad roads of early days) the propagation of intelligence through the body politic was very slow. The slowness continued down to comparatively late periods. Queen Elizabeth's death was not known in some parts of Devon until after the Court had gone out of mourning, and the news of the appointment of Cromwell as Protector took nineteen days to reach Bridgewater [Smiles 1861–62, I, 185].

Nor have we to remark only the tardy spread of the influences required for cooperation of parts. The smallness and uniformity of these influences have also to be noted in contrast with their subsequent greatness and multiformity. Instead of the courier bearing a single despatch, military or political, from one ruling agent to another, at irregular intervals in few places, there come eventually, through despatches of multitudinous letters daily and several times a day, in all directions through every class, swift transits of impulses, no less voluminous than varied, all instrumental to cooperation.

Two other internuncial agencies of more developed kinds are afterwards added. Out of the letter, when it had become comparatively frequent among the educated classes, there came the newsletter: at first a partially printed sheet issued on the occurrence of an important event, and having an unprinted space left for a written letter. From this, dropping its blank part, and passing from the occasional into the periodic, came the newspaper. And the newspaper has grown in size, in multitudinousness, in variety, in frequency, until the feeble and slow waves of intelligence at long and irregular intervals, have become the powerful, regular, rapid waves by which, twice and thrice daily, millions of people receive throughout the kingdom stimulations and checks of all kinds, furthering quick and balanced adjustments of conduct.

Finally there arises a far swifter propagation of stimuli serving to coordinate social actions, political, military, commercial, etc. Beginning with

the semaphore telegraph, which, reminding us in principle of the signal fires of savages, differed by its ability to convey not single vague ideas only, but numerous, complex, and distinct ideas, we end with the electric telegraph, immeasurably more rapid, through which go quite definite messages, infinite in variety and of every degree of complexity. And in place of a few such semaphore telegraphs, transmitting, chiefly for governmental purposes, impulses in a few directions, there has come a multiplicity of lines of instant communication in all directions, subserving all purposes. Moreover, by the agency of these latest internuncial structures the social organism, though discrete, has acquired a promptness of coordination equal to, and indeed exceeding, the promptness of coordination in concrete organisms. It was before pointed out that social units, though forming a discontinuous aggregate, achieve by language a transmission of impulses which, in individual aggregates, is achieved by nerves. But now, utilizing the molecular continuity of wires, the impulses are conveyed throughout the body politic much faster than they would be were it a solid living whole. Including times occupied by taking messages to and from the offices in each place, any citizen in Edinburgh may give motion to any citizen in London in less than one-fourth of the time a nervous discharge would take to pass from one to the other, were they joined by living tissue.

Nor should we omit the fact that parallelism in the requirements has caused something like parallelism in the arrangements of the internuncial lines. Out of great social centers emerge many large clusters of wires, from which, as they get further away, diverge at intervals minor clusters, and these presently give off re-diverging clusters, just as main bundles of nerves on their way towards the periphery, from time to time emit lateral bundles, and these again others. . . .

The general result, then, is that in societies, as in living bodies, the increasing mutual dependence of parts, implying an increasingly efficient regulating system, therefore implies not only developed regulating centers, but also means by which the influences of such centers may be propagated. And we see that as, under one of its aspects, organic evolution shows us more and more efficient internuncial appliances subserving regulation, so, too, does social evolution. . . .

The general law of organization, abundantly illustrated in foregoing chapters, is that distinct duties entail distinct structures; that from the strongest functional contrasts come the greatest structural differences and that within each of the leading systems of organs first divided from one another in conformity with this principle, secondary divisions arise in conformity with the same principle. The implication is, then, that if in an organism, individual or social, the function of regulation falls into two divisions which are widely unlike, the regulating apparatus will differen-

tiate into correspondingly unlike parts, carrying on their unlike functions in great measure independently. This we shall find it does.

The fundamental division in a developed animal we have seen to be that between the outer set of organs which deal with the environment and the inner set of organs which carry on sustentation. . . . A parallel contrast of duties produces a parallel differentiation of structures during the evolution of social organisms. Single in low societies as in low animals, the regulating system in high societies as in high animals becomes divided into two systems, which, though they perpetually affect one another, carry on their respective controls with substantial independence. Observe the like causes for these like effects.

Success in conflicts with other societies implies quickness, combination, and special adjustments to ever varying circumstances. Information of an enemy's movements must be swiftly conveyed, forces must be rapidly drafted to particular spots, supplies fit in kinds and quantities must be provided, military maneuvers must be harmonized, and to these ends there must be a centralized agency that is instantly obeyed. Quite otherwise is it with the structures carrying on sustentation. Though the actions of these have to be somewhat varied upon occasion, especially to meet war demands, yet their general actions are comparatively uniform. The several kinds of food raised have to meet a consumption which changes within moderate limits only; for clothing the demands are tolerably constant, and alter in their proportions not suddenly but slowly; and so with commodities of less necessary kinds: rapidity, speciality, and exactness, do not characterize the required coordinations. Hence a place for another kind of regulating system. Such a system evolves as fast as the sustaining system itself evolves. Let us note its progress.

In early stages the occupations are often such as to prevent division between the control of defensive actions and the control of sustaining actions, because the two are closely allied. Among the Mandans the families joined in hunting and divided the spoil equally, showing us that the war with beasts carried on for joint benefit was so nearly allied to the war with men carried on for joint benefit that both remained public affairs [Lewis and Clarke 1814, p. 113]. Similarly with the Comanches, the guarding of a tribe's cattle is carried on in the same manner as military guarding and since the community of individual interests in this protection of cattle from enemies is like the community of interests in personal protection, unity in the two kinds of government continues [Marcy 1866, p. 29]. Moreover in simple tribes which are under rulers of any kinds, what authority exists is unlimited in range and includes industrial actions as well as others. If there are merely wives for slaves, or if there is a slave class, the dominant individuals who carry on outer attack and defense also direct in person such labor as is performed, and where a chief having

considerable power has arisen, he not only leads in war but orders the daily activities during peace. The Gonds, the Bhils, the Nagas, the Mishmis, the Kalmucks, and many other simple tribes show us this identity of the political and industrial governments.

A partial advance, leading to some distinction, does not separate the two in a definite way. Thus among the Kukis the rajah claims and regulates work, superintends village removals, and apportions the land each family has to clear on a new site [Stewart 1855, p. 635]; among the Santals the head man partially controls the people's labor [Hunter 1868, p. 217]; and among the Khonds he acts as chief merchant. Polynesia presents like facts. The New Zealand chiefs superintend agricultural and building operations [Angas 1847, II, 50]; the Hawaiian Islanders have a market, in which "the price is regulated by the chiefs" [Ellis 1826, p. 292]; trade in Tonga also "is evidently under [the chief's] supervision" [Wilkes 1845, III, 22], and the Kadayan chiefs "settle the price of rice" [St. John 1862, II, 269]. So again in Celebes the days for working in the plantations are decided by the political agency, and the people go at beat of gong [Wallace 1869, I, 387]; so again in East Africa the times of sowing and harvest depend on the chief's will [Burton, R. 1860, p. 365], and among the Inland Negroes the "market is arranged according to the directions of the chiefs" [Allen 1848, I, 321]; so again in some parts of ancient America, as El Salvador, where the cacique directed the plantings [Palacio 1860, p. 83]. . . .

In other societies, and especially in those which are considerably developed, we find this union of political and industrial rule becoming modified; the agency, otherwise the same, is doubled. Thus among the Sakarran Dyaks there is a "trading chief" in addition to two principal chiefs [Low 1848, p. 184]; among the Dahomeans there is a commercial chief in Whydah [Burton, R. 1864, I, 52], and there are industrial chiefs in Fiji, where, in other respects, social organization is considerably advanced. At a later stage the commercial chief passes into the government officer exercising stringent supervision. In ancient Guatemala a state functionary fixed the price of the markets [Ximénez 1857, p. 203], and in Mexico, agents of the state saw that lands did not remain uncultivated [Zurita 1840, pp. 56–7].

Facts of this kind introduce us to the stages passed through by European societies. Up to the tenth century each domain in France had its bond, or only partially free, workmen and artisans, directed by the seigneur and paid in meals and goods; between the eleventh and fourteenth centuries the feudal superiors, ecclesiastical or lay, regulated production and distribution to such extent that industrial and commercial licences had to be purchased from them; in the subsequent monarchical stage, it was a legal maxim that "the right to labor is a royal right, which the prince may sell and subjects can buy;" and onwards to the time of the Revolution the

country swarmed with officials who authorized occupations, dictated processes, examined products, . . . [Levasseur 1859, I, 167; Bourquelot 1865, Pt. II, 208–9].

Still better does our own history show us this progressive differentiation. In the Old English period the heads of guilds were identical with the local political heads – ealdormen, wick-, port-, or burgh-reeves – and the guild was itself in part a political body. Purchases and bargains had to be made in presence of officials. Agricultural and manufacturing processes were prescribed by law. Dictations of kindred kinds, though decreasing, continued to late times. Down to the sixteenth century there were metropolitan and local councils, politically authorized, which determined prices, fixed wages, etc. [Lappenberg 1845, II, 352–3, 355–6; Hallam 1867, I, Ch. 8; Macaulay 1849–61, I, 416]. . . .

Summary

Thus the increasing mutual dependence of parts, which both kinds of organisms display as they evolve, necessitates a further series of remarkable parallelisms. Cooperation being in either case impossible without appliances by which the cooperating parts shall have their actions adjusted, it inevitably happens that in the body politic, as in the living body, there arises a regulating system and within itself this differentiates as the sets of organs evolve.

The cooperation most urgent from the outset is that required for dealing with environing enemies and prey. Hence the first regulating center, individual and social, is initiated as a means to this cooperation, and its development progresses with the activity of this cooperation. As compound aggregates are formed by integration of simple ones, there arise in either case supreme regulating centers and subordinate ones and the supreme centers begin to enlarge and complicate. While doubly compound and trebly compound aggregates show us further developments in complication and subordination, they show us, also, better internuncial appliances, ending in those which convey instant information and instant command.

To this chief regulating system, controlling the organs which carry on outer actions, there is, in either case, added during the progress of evolution, a regulating system for the inner organs carrying on sustentation and this gradually establishes itself as independent. Naturally it comes later than the other. Complete utilization of materials for sustentation being less urgent, and implying coordination relatively simple, [it] has its controlling appliances less rapidly developed than those which are concerned with the catching of prey and the defense against enemies.

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tions to struc functions in the human body have been made, they have been made only because structures and functions in the human body furnish familiar illustrations of structures and functions in general. The social organism, discrete instead of concrete, asymmetrical instead of symmetrical, sensitive in all its units instead of having a single sensitive center, is not comparable to any particular type of individual organism, animal or vegetal. All kinds of creatures are alike in so far as each exhibits cooperation among its components for the benefit of the whole and this trait, common to them, is a trait common also to societies. Further, among individual organisms, the degree of cooperation measures the degree of evolution and this general truth, too, holds among social organisms. Once more, to effect increasing cooperation, creatures of every order show us increasingly complex appliances for transfer and mutual influence and to this general characteristic societies of every order furnish a corresponding characteristic. These, then, are the analogies alleged; community in the fundamental principles of organization is the only community asserted.)