ETHNICAL UNIT AND MILIEU

A SUMMARY OF THE ETHNOS

BY

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FOREWORD

The present paper is the author's translation of a part of the Preface (partly remodelled), of Chapter VI, two pages of Chapter VII and the Conclusion of the author's work published in 1923 in Russian, and entitled: "ETHNOS. GENERAL PRINCIPLES OF ETHNICAL AND ETHNOGRAPHICAL VARIATIONS." This study was written in the midst of political anarchy in Vladivostok, where the author was deprived of library and merest elementary conditions of writing. Though the conditions of writing in Shanghai, as regards the library, are not satisfactory, nevertheless the author decided to publish his work as it had been originally done. This publication, like all publications in the Russian language published abroad, is, practically speaking, now not accessible, even to Russian scientists. The majority of the latter are residing in their own country, which itself is undergoing one of the most interesting *ethnological*, not simply political or sociological processes. Though this process as the sole material of its kind is very important for scientific deductions, it is not yet so for those scientists who are living in the medium of this process and are themselves, if the comparison can be allowed, mere chemical products of a chemical reaction and not chemists in control. This consideration has compelled the author to publish this paper in English, as far as it lay within his present possibilities, with the view of obtaining criticism before carrying on further investigations in this line.

During the printing of the present paper the author had great satisfaction of obtaining and studying the work of Prof. Louis Berman "The Glands Regulating Personality" (New York, 1922 MacMillan). The publication of such a book seemed to the author to be a good sign showing that this theory has already left the close circles of histologists, chemists and biologists, and may soon become of general use and, consequently, that it may now be applied to other fields of scientific investigation. The reading of this book reinforced the author's intention of publishing the

extracts of his own work. Though it was very attractive for him to develop immediately and more fully some propositions expounded in these extracts, he nevertheless decided to preserve the original version of his work. It may here be pointed that the theory of glands of internal secretion with its late deductions and their application to the author's system, as far as it may now be seen, will help to bridge the *hiatus* between the biological sciences, now built on a solid ground of chemistry, physics and mathematics, and our knowledge and its derivates dealing with the human psychic and mental activities, as sociology, jurisprudence, ethnography, history (including the history of sciences), philosophy and so on. It ought also to be noted that the problem of finding the value of S from the methodological standpoint may be much simplified, if the theory of glands is applied. Again, the process of maintenance of equilibrium of these glands seems to be the same as that found for ethnical phenomena. This is not unexpected as the internal secretions underly ethnical activities and, as is above formulated here in the Conclusion, Proposition 7, culture is a derivate of the biological function of man. Furthermore, the author thinks that, should the theory of glands be adopted, the formulae of ethnical equilibrium, interethnical value and the scheme of impulsive variations outlined in this paper may be applied to other animal and vegetative units, as general formulae of the process of variation. The author hopes to later analyze the consequences following from the combination of the theory of glands of internal secretion and that of ethnos.

Shanghai. April, 1924.

THE AUTHOR.

ETHNICAL UNIT AND MILIEU

Before commencing this paper definitions of some terms ought to be given. The author introduces a new term "*ethnos*" (from ἔθνος) which means,—a group of people speaking the same language, recognizing their common origin, possessing a complex of customs and a social system, which is consciously maintained and explained as tradition, and differentiated from those of other groups. This is the ethnic unit in which the processes of variation (growth and decline) of all ethnographical, linguistical and anthropological phenomena are running.

The term "ethnical" and "ethnic" are used as adjectives of "ethnos," and "ethnography" is used as the name of a science studying ethnoses from the standpoint of knowledge previously collected by ethnoses and resulting in some technical, social, mental and psychological systems, so that this science includes sociology, psychology, technology, history and so on. Again, "anthropology" serves to designate a science dealing with the physical, anatomical characteristics of man, as an animal species (or genus). Finally "ethnology" designates a science studying the process of variation of ethnical phenomena, being a science which combines the deductions of anthropology, ethnography, linguistics and so on.

Process of variation of these phenomena is a function of the biology of man who adapts himself to the geographical environment (climate, soil, other animal species, etc.) by the variation of his psychic, mental and physical capacities which assure his existence in the given physiographical conditions. From this standpoint the culture, or in other words human knowledge and experience appropriated by the previous generations and inherited, is a product of a purely biological function, and all phenomena of a physical, social, psychic and technical order are concrete manifestations of this process.

The life, the origin, the decline and growth of an ethnos occur in some given geographical conditions which may be favourable or unfavourable to it. There are three kinds of

phenomena:—those given by nature and those created by man (ethnos), finally those resulting from the intercourse or rather inter-ethnical relations. No attempt is herein made to analyze the phenomena of the first two groups, the relations of the third group, or *ethnical milieu* alone being treated.

As is well known, both geographical conditions and secondary conditions resulting from the culture form the milieu of an ethnos, e.g., new technical materials, domesticated animals and so on. The milieu of a non-isolated ethnos is however formed not only of these primary and secondary conditions (environment), but also by the contact of other ethnoses. From these it appropriates new knowledge, with them it agglomerates, amalgamates and sometimes fights up to the final mutual destruction. Such is *ethnical milieu*.

It is not difficult to see the differences of position of two ethnoses, one living, e.g., among ethnoses of Mongolian culture and another—among those of Central African culture; or, again, the difference of position of two other ethnoses, one of which is living among South American ethnoses while the other is living among the Slavs of Southern Europe. The degrees of pressure from neighbours and the degrees of mutual influence in all these cases are different. Not less different is the possibility of amalgamation and assimilation of these ethnoses by their neighbours. Thus for an ethnos other ethnoses form a milieu which is also subject to the reciprocal influence of this ethnos. Therefore the analysis of these relations is necessary for understanding the origin, culture and position of ethnoses. It is now generally admitted that this method ought to be applied to ethnoses of highly civilized groups, as well as to those at a low level of technical, social and psychical culture. Since the study of history and origin of highly civilized nations cannot be successful without the analysis of the whole of civilization and ethnical movements, the same principle should be applied to ethnoses in other cycles of culture. Social institutions, philosophy, even technical culture, e.g., that

of the Buriats (Mongols of Trans-baikalia) are not intelligible without a minute investigation of the Mongols and their neighbours, the Russians, Chinese and Tungus, just as the history of Russia is not at all clear, if the history of the Mongols, Turks and Chinese are omitted.

Thus, if we admit that the factor of ethnical milieu has the principal importance in the formation of the position of an ethnos, then,—(1) the degrees of influence of an ethnos on others result in different combinations of inter-ethnical relations and conditions characteristic of this ethnos, and (2) the strength and power of the ethnoses (which surround the given ethnos) define the reciprocal relations of neighbouring ethnoses and the intensity of the ethnical milieu.

An ethnos is always struggling for its existence and, if it can oppose other ethnoses and becomes victorious, it may *continue expanding in territory*, which is one of the external manifestations of its growth. Thus an ethnos has as the first problem the adaptation of itself to the primary environment; as the second problem, the creation of secondary environment and self-adaptation to it. These result in some inner organization of the ethnos (social culture), if such is necessary for adaptation to the primary and secondary environment. The numerical value of an ethnos is a manifestation of its adaptiveness and it can have the following phases: stationary, growing and decreasing. Finally, the ethnical milieu gives to the ethnos one problem more to solve, —to create inter-ethnical relations which may assume various forms. These forms are,—cooperation, commensalism, parasitism and, if owing to these relations the ethnos is not extinguished, it may be assimilated, amalgamated or replaced by other ethnoses: this depends exclusively on the biological power of the ethnos.

What is this power? An ethnos, like all biological species, has as a principal purpose to maintain its position among other animal species and ethnoses, to maintain its right of existence. Means to this end are, above all, first, the adaptation to primary and secondary environment and next the *resistibility to the pressure of other ethnoses and the ability*

of utilizing them in the interest of the ethnos. The forms of adaptation to the primary and secondary environment are manifold, the forms of adaptation to the ethnical milieu being not less complicated and various. The external manifestation of the ability of self-adaptation to these conditions are before all—*the numerical value of the ethnos relatively to other ethnoses* (the cultures being similar and equal) *and maintenance of the same at a certain level.* If there is any difference in the quantitative or qualitative value of culture, numerical superiority loses its importance. For instance, a numerically great ethnos which has no developed technical culture cannot oppose a numerically small one possessing a highly developed culture; the highly developed culture permits the latter to oppress the first, even to extinguish it. Many examples of this kind can be cited, but the best are furnished by the colonizing activity of highly developed ethnoses.

The assimilation and amalgamation of the aborigenes in Southern China by the Chinese is almost completed; the assimilation of the Gallic elements by the Romans took place during some two or three centuries; the cultural assimilation of the aborigenes of Transbaikalia took less than two centuries even though the Russian colonists were in a significant minority. This process can be reinforced and accelerated, if the colonization uses the principle of deliberate extinction of natives who are considered as harmful beasts. The history of colonization furnishes us with several examples of a prompt and complete extinction of natives.

If ethnoses have nearly the same numerical values, cultural superiority may also give superiority in the struggle for existence. If we take, for example, an agricultural ethnos and an industrial one, the latter will have superiority, because it will put the first in a state of dependence by its industrial activity, means of communication and so on. At the same time the superiority of the agricultural technique gives to the ethnos that uses it preponderance over the nomad ethnos. Moreover, owing to this agricultural products of the United States compete with those of Russia, and the Russian colonists cannot compete with the natives of China and Japan, who are very adapted to the local conditions. In the Caucasus the influence of the Armenians, who are mostly engaged in industry and commerce, is much greater than that of the Georgians who are chiefly

agriculturists. These cultural peculiarities of ethnoses must always be allowed for, when the numerical value of ethnoses is considered.

Thus, if there are two ethnoses who have similar and equal cultures, the better adapted of them is the one having a higher numerical value. We may take, for instance, the Buriats and Nomad Tungus in Transbaikalia, whose numerical values are about 300,000 and 3,000 respectively. The numerical superiority of the first doubtless gives all the preponderance to them, and they are assimilating the Nomad Tungus.

The second proposition—the maintenance of numerical value—ought also to be explained. There is a very common opinion adopted by sociologists, economists, politicians, historians and even ethnographers professing *that the ethnos (or nation, or people,) must numerically grow and that those which do not grow are in a state of degeneration and decline*. Taking into consideration the inter-ethnical relations that may be observed in Europe, this opinion from a psychological standpoint can be understood as quite natural, although it is absolutely erroneous. In fact, if there be stability of culture in a given ethnos, there exists a limit of numerical growth. If the given territory and cultural conditions give means of existence to a certain ethnos, then it cannot increase its numerical value without improving its culture. Consequently *with an increase of population, exceeding the possibility of nourishment, the excess of population must perish or the natality must be regulated by some means,—medical, artificial, social etc.* Owing to this there persist several customs, as for example, legal (i.e., recognized by the state or society) infanticide, abortion, birth control, killing of old people and so on. Some ethnoses do not recognize these methods, but practise other methods of regulation, as for example allowing an enormous mortality of children, prohibiting or raising economical impediments to hasty marriage, developing different forms of complete prohibition of marriage (including monachism) and so on. All these customs and norms have something which can be generalized,—i.e., *the limitation of increase of population*. If we take as an example the killing of girls—a custom which provokes such a repugnance among the Europeans—from the point of view of

the parents, who follow the interest of the community by limiting increase of population, it is an act of real virtue. In Borneo the killing of old people took the form of a religious act. The killing of old people in North America was an act of filial piety. In China the leaving of old people, who reached their 60 years, without food, as it is now practised among the Chukchis of North-Eastern Asia, has left its traces in their memory—in stories and tales and, perhaps, in the form of a very great esteem for this critical age. Europeans, who do not practise all these customs, invented various methods of abortion which are also known to ethnoses living in a very primitive cultural state. Among the Russian peasants, who have no preventive methods and, being orthodox Christians, do not practise infanticide, an enormous child mortality plays the part of the regulator. The custom of late marriages has the same biological significance resulting in some European countries in the rise of the average age of brides up to thirty years.

Thus, all ethnoses, adopting some method of preventing the increase of population or allowing only its slow progress, practise it in some form admissible and intelligible in their cultural state, but they do it absolutely unconsciously. For example, infanticide may take the form of a religious sacrifice ; the regulation of conception and practice of abortion are explained by the civilized Europeans as having their motives in the anxiety for the best condition for other children, born and to be born ; late marriages are explained by the necessity of creating some financial basis for the new family; the renouncing of marriage takes various forms—moral, religious and so on ; finally the indifference to the mortality of children among the Russian peasants finds its reassuring formula in the supreme will of God. Thus, *this function*, as well as the major part of biological functions of ethnos, *takes some veiled form, which however is always correlated with the cultural state and ideas of the given ethnos.*

It follows from the above examples and analysis that the increase of population is regulated on the one hand by the limits of territory, and on the other—by the limited growth of culture. A territory necessary for the means of existence to a population, whose sole occupation is hunting, ought to be, of course, larger

than that occupied by the same number of people, living by cattle-breeding. Furthermore, agricultural people need less territory than cattle-breeders, and industrial people need less than agriculturists. In other words, the more *intensive the exploitation of territory, the larger population the given territory may nourish.*

Maps of density of population give many illustrations of this principle. The fact that territory fit for habitation is distributed without uniformity cannot, however, be omitted and the extent of the territory that can be populated and that is not allowed for, owing to its topographical characters, marshes, deserts, rocky mountains and so on, must be noted in the maps of density of population. Thus, *density of population depends on the degree of culture of the given ethnos*, so that if the territory and culture are not liable to variation, *the excess of natality over the mortality is a constant and equal to zero.* This can also be expressed thus:—*the relation of density of population P*, which is the rate of the number of population q to the area of the territory T, i.e. $P=\frac{q}{T}$, *to the culture S is a constant*, i.e.:

$$\frac{q}{ST}=\frac{P_1}{S_1}=\frac{P_2}{S_2}=\dots=\frac{P}{S}=\omega \text{ and } \frac{q}{ST}=\omega.$$

Whence it follows that an ethnos which is not in the process of physical degeneration cannot vary its numerical value without varying the quantity of S (culture) and T (territory), and the expression $\frac{q_1}{ST}$ where $q_1 \leqslant q$ and q_1 and q are numbers of population at two different periods is impossible, because with the decrease of the numerical value quantities of S and T, or both must also be varied. During this period, the period of variation, the ethnos is in *a state of disequilibrium.* Therefore the formula $\frac{q}{ST}=\omega$ can be defined as the *formula of ethnical equilibrium*, and ω—as the *coefficient of ethnical equilibrium.*

From the above it follows that the expression "degenerating people" in an ethnological sense can be used only with reference to the factors q, S and T taken in comparison at some moments of time, which cannot always be easily defined..

Let us suppose there is an increase of territory and growth of culture, while the population maintains itself at the same numerical level or its growth is disproportionately slow (to that of S or T), then such an ethnos may be supposed to be in the process of ethnical degeneration, although from the biological (simple) standpoint it is not yet degenerating. At the same time the reduction of territory and decline of culture along with the maintenance of the former numerical value of the given ethnos give us the right of deducting the *ethnical growth of this ethnos*.

Thus the expression *maintenance of the level of numerical value* must be understood, as shown, not absolutely but relatively to the variation of S and T. We have to note that these arithmetical calculations do not exhaust the question of ethnical growth and decline. In order to maintain the level of population the ethnos sometimes adopts the infusion of foreign blood and in this manner it is little by little substituted by another ethnical unit, so that this process may result in a complete replacing of an ethnical unit by another one with all the consequences following from it, as for example, the change of psychic and mental ability, which is probably connected with other anthropological characteristics, and so on. Thus, an ethnos, in the sense of the word, as it was above defined, may "die" without any apparent manifestation of this process, and the indication of the maximum power is, of course, its numerical growth, which can probably be correlated with the growth of both S and T.

From the inter-ethnical standpoint the ethnoses can be considered to be in a stationary state, in a growing state and in a state of decline. This classification has, of course, its gradations, the quantitative value of which will probably be found with the advance of knowledge of ethnical phenomena. Now we shall detail this question so far as it is permitted by the above deductions. But before reaching these details let us linger a moment on the problem of culture. The practical application of culture resulting in some social, philosophical and technical systems, allows the ethnos to assure its existence. There are ethnoses which develop practical application of not all branches of culture, but of some of them. It is clear that social organization of the

Hindoos with their castes is much more complicated than that of Mongols. The technical culture of the United States is also more complicated than that of many other countries and so on. But the Hindoos as well as the Mongols do exist, and it cannot be said which of them are more stable. In the other words, the cultural complex has its equilibrium proper to every ethnos, and the changing of some elements of this complex results in replacing or removing of other elements in order to maintain this equilibrium. It is obvious that the introduction of Buddhism into the United States is impossible without changing the whole aspect of this cultural complex, as well as the introduction of scientific knowledge into Tibet would have the same effect. So that the variation of some cultural elements of the cultural complex is always followed by the change of the whole aspect of the complex, as such, and the period of cultural variation may be defined as *cultural disequilibrium*. If there is no equilibrium, the ethnos begins to change its original aspect and, if it cannot effect the replacing and filling up of lost elements, it falls into *ethnical decline*. But the replacing, if it is allowed, mechanical replacing of cultural elements by some foreign ones, results in the loss of ethnical features, and the ethnos may fall into the state of *ethnical degeneration*. But it is not presumed, of course, that the lost elements or the whole cultural complex are "higher" or "lower" than the new ones. From this point of view the natives of North America who partly became farmers, as well as the Tungus of Transbaikalia who have abandoned their wandering habits are *degenerating ethnoses*.

Physical degeneration of ethnos may be defined as a process of physical extinction, extinction of living individuals (e. g., of Tasmanians, Bushmen, Itelmen and so on) or a progressive substitution of an anthropological type by another one with the preservation of the ethnographical feature (e. g. the Ossets of the Caucasus, Greeks, Southern Germans and others). Thus in both cases of numerical decrease and anthropological substitution there is a process of physical extinction of ethnos resulting from ethnical disequilibrium.

We have already given the formula of ethnical equilibrium and the constant ω. Now let us consider this question more in detail and analyze the consequences resulting from it.

If the quantities of q, S and T are in a state of stability, the ethnos is always in a *stationary state*. What must happen, if there is variation of q, increase or decrease of it? In order to maintain the constant ω the quantities S and T or one of them must also be varied, so that *with the variation of q there appears an impulse of variation of S and T or one of them.* Then the quantity $\frac{q}{ST}$ will change proportionally to the relation of original q to the difference of original and present q_1 ($q_1 - q = \Delta q$) so that *the impulse of variation of S and T* (it may be positive or negative) will be $\pm i_{st} = \frac{q}{ST} \cdot \frac{q}{\Delta q} = \omega \frac{q}{\Delta q}$.

This phenomenon may occur, if the given population has a very great biological power and at the same time has sufficient adaptiveness. If the reserve of territory be already exhausted, it may cause some further complication of culture and its concrete manifestations or a development of conquering intentions which, as will be shown, is possible only in the conditions of biological superiority. Biologically powerful ethnoses are always more inclined to conquer new territory *manu militari*. Meanwhile weak and less conservative ethnoses choose the way of cultural adaptation, consequently, further complication of culture. From this standpoint the cultural development of Western Europe and the Southern American states, as Ancient Peru, Chile and so on, squeezed between ocean and mountain chain, in the condition of lack of territory was probably stimulated by the growth of population.

The reducing of territory or decline of culture may happen, if q_1 (second observation) be lower than q (first observation). Such a phenomenon is correlated with physical degeneration owing to the natural senescence of ethnos, disease or physic extinction. The occupation of its territory can be done by another ethnos which sometimes occupies an inferior position. Such a process is characteristic of the Romans, who preferring the life of Rome, took the barbarians as labour for agricultural work and let them occupy the lands in provinces. In such a position seem to be the Irish who during the XIXth century lost about thirty per cent of their population. Such a position is also characteristic

of many so called wild ethnoses, e. g. Tasmanians, Yukaghirs and others, who perish owing to contagious maladies and alcoholism and lose their culture as well as their territory.

What may happen, if there is a variation of the quantity T? Causes of it can be conquest of the new territory by artificial methods—drying of marshy lands, extinction of woods and so on—and the conquest of new territory *manu militari*, by force. On the other hand the decrease of territory may occur owing to the spreading of the forests over arable lands, because of fire (if there is a hunting territory—extinction of forests), spreading of marshes and ravines and especially by conquest or slow occupation by other ethnoses. In such cases either increase of S or decrease of q or both may occur. In other words,—*along with the variation of T there appears an impulse of variation of S and q*. The increase of T however can result sometimes in a relative decline of culture, if the ethnos cannot preserve its former density.[1] This relation can be formulated analogically with the preceding formula, as

$$\pm i_{sq} = \frac{q}{S\,T} \cdot \frac{T}{\Delta\,T} = \omega \frac{T}{\Delta\,T}.$$

Such is the lot of many ethnoses which for the sake of self-defense are compelled to occupy spacious free territory or those occupied by other ethnoses. However, if the ethnos possesses a sufficient biological power, it can preserve its original culture at some given level.

Reduction of territory results in the increase of culture or decrease of population. If the given ethnos is a conservative one, the decrease of population is inevitable, but, if the given ethnos is able to change its culture, the maintenence of the former number of population is possible (the increase of density). That constitutes

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1. Here it should be noted that not all territories can be considered as equivalent. It is evident that thousands of square kilometers of desert are not equivalent to a hundred square kilometers of arable land from the standpoint of its utility for an agricutural ethnos. I presume, therefore, that the quantity T must be corrected by the *coefficient of utility of territory*.

the difference between the ethnoses that are in a low state of culture (such ethnos being at the same time usually more conservative), as for example, in Siberia and America, when they were compelled, to reduce their numerical values, after Siberia and America had been occupied by Russians and other Europeans respectively, and the ethnoses that possess the highest culture, e.g., the French after the war of 1870-71.

If it may be agreed that the culture bears in itself the elements of spontaneous development, then *with the variation of culture there appears an impulse of variation of* T *and* q.

This relation can be formulated by analogy with the preceding cases as the impulse of variation of T and q. $\pm i_{T_q} = \frac{q}{ST} \cdot \frac{S}{\Delta S} = \omega \frac{S}{\Delta S}$. Deductions which can be drawn are similar to those that have been analyzed in the preceding exposition.

It can also be seen from the comparison of these three formulae and the above examples that the impulses with negative signs—when $q_1 < q$; $S_1 < S$ and $T_1 < T$—resulting in ethnical disequilibrium show a decline of ethnos or a retardation of its development and always some tension of its biological power in the sense of increase of population or development of culture.

The ethnos in which negative impulses predominate is usually a degenerating, a perishing one, if it is not in a temporary *anabiotic state*, i.e. in a state of reduced functions, as a consequence of self-defence, as a means of self-preservation. So for instance the ancestors of the Manchus fell into a state of anabiosis during the Mongol (the Yuan Dynasty) and Chinese (the Ming Dynasty) control over China and Manchuria. As another instance may serve the Chekho-slovaks, if their republic should be able to pass through all the political and economic difficulties that may be expected in the near future. However the perishing and complete extinction of ethnoses as a phenomenon is very common, but, if the given ethnos was already submitted to the influence of a range of negative impulses, regeneration is rather rare.

From the comparison of these formulae and the above examples it can also be seen that the impuless with positive signs, when $q_1 > q$, $S_1 > S$ *and* $T_1 > T$, result in a growth of ethnos—in all elements, or in some of them—and preservation of *ethnical equilibrium*. Such ethnoses can be called *growing ethnoses* which sometimes, during unfavourable periods, stop the increase of population, culture and territory and pass into a *stationary state*. But the decrease of population, especially during the wars and popular movements, being sometimes manifestations of normal biological functions, is not always a sign of ethnical decline and degeneration, because such a decrease of population is sometimes absolutely necessary in order to facilitate the course of processes of variation and maintenance of the ethnical equilibrium. Therefore, in order to have *an exact definition of the real state of an ethnos, it is necessary that there be some space of time.*

Let us generalize. *If the variation of one of the factors gives negative impulses of variation, then in order to re-establish the constant* ω, *there ought to be produced negative impulses of variation of other factors; zero impulse and positive sign of impulse are not followed by changing of signs of other impulses.*

The general formula $\frac{q}{ST} = \frac{P}{S} = \omega$ shows the relation of the density of population to the cultural state of this population, and this relation is a constant one; in other words, the density of population depends on the cultural state of the ethnos and its biological power. Furthermore, the more favourable the environment, the greater can be the density, because the favourable environment facilitates the growth of culture, and overproduction of products of nutrition opens the possibility of progressive growth of population. The overproduction of products of nutrition can be the result of a direct adaptation to the environment as well as it can result from the creation of a new inner organization of the ethnos (more developed division of work and so on), which allow more perfect exploitation of human energy. The same principle can be referred to the psychic and mental culture which is the result of experience, *understanding* of

phenomena and deductions made by the given ethnos. Thus all elements of culture are bound together and form the value of the complex S.

With the particular formulae of variation as shown, the general formula then will be $\frac{q_1 - q}{(S_1 - S)\ (T_1 - T)} = \frac{\Delta q}{\Delta S \Delta T}$

If the ethnos is in the process of variation in relation to the territory and, stability of culture being given, the variation will affect only the population. This relation can be defined as follows: $\pm i_{ST} = \omega \frac{q}{\Delta q}$. But in order to maintain the equilibrium, the variation of T should also be considered. Since $\pm i_{Sq} = \omega \frac{T}{\Delta T}$, the impulses must have similar signs and be equal: $\omega \frac{q}{\Delta q} = \omega \frac{T}{\Delta T}$ or $\frac{q}{\Delta q} = \frac{T}{\Delta T}$, whence $\Delta q = \Delta T \frac{q}{T}$ and $\Delta T = \Delta q \frac{T}{q}$.

If there is stability of T, between the factors q and S there will be the following relation: $\Delta q = \Delta S \frac{q}{S}$ and $\Delta S = \Delta q \frac{S}{q}$.

Finally, if there is stability of q, then $\Delta S = \Delta T \frac{S}{T}$ and $\Delta T = \Delta S \frac{T}{S}$.

Thus, if the ethnos is in a state of constant dynamic stability, the relation between these moments can be represented as a straigt function, but, if there is no stability and impulses of different moments are not equal and have different signs, it may be stated that there is a retardation of development of this ethnos or even its decline.

The above relation of variation of moments, one of them being variable, allows us to make deductions some of which will now be examined.

I. The formulae of relation of the culture and territory $\Delta S = \Delta T \frac{S}{T}$ and $\Delta T = \Delta S \frac{T}{S}$ permit us to deduce the following:

When the culture varies,

(1.) The higher the original culture, the less the territory varies;

(2.) The lower the original culture, the more intense is the variation of territory;

(3.) The greater the original territory, the more intense is its variation;

(4.) The smaller the original territory, the less it varies.

These principles can also explain, for instance, very slow spreading (in the territory good for colonization) of the peoples of high culture combined with a very slow variation of the numerical value of their population. For example, in China the population did not change since 685 B.C. up to the Second Century B.C. and since 2 A.D. up to the XVIIth it was about at the same level.

The same principles can explain to us the relatively slow reduction of the territories belonging to the highly (relatively, of course) civilized ethnoses, when they begin to lose their culture. The Celts who were able to preserve partly their territory have now probably about the same number of population that they had at the moment of their most flourishing state. The same principles can explain to us very intense territorial expansion of ethnoses of low cultural states when they begin to develop their culture. As an instance of this kind we can take the Tungus who having appropriated some higher culture spread very widely in the territory of Asia, while the same Tungus show how the ethnos of relatively low culture may easily lose its territory.

Here it is necessary to note that the above examples, being analyzed with all possible detail, will probably show some other causes reinforcing and retarding the process, but at present, when we have no statistical data, the examples can be taken only approximately. Generally speaking, among the ethnoses it is, in the author's opinion, difficult to find manifestations of relation between only two factors, because the process of variation running in the ethnoses touches, of course, the third factor connected evidently with the others.

II. The formulae of relation of the territory and population when the culture does not vary (stationary state of culture) will be: $\Delta T = \Delta q \frac{T}{q}$ and $\Delta q = \Delta T \frac{q}{T}$, whence the following principles can be deduced:—

When the population varies,

(1.) The greater the starting territory, the more intensive is its variation ;

(2.) The smaller the starting territory, the less intensive is its variation.

When the territory varies,

(3.) The greater the starting territory, the less intensive is the variation of population ;

(4.) The smaller the starting territory, the more intensive is the variation of population.

Thus, for example, the ethnoses (and states) possessing a great territory show more intensive reaction upon the variation of population, i.e., the increase of population produces an impulse to a greater enlargement of territory than in the case of small ethnoses. Therefore great powers have always a greater intensity of variation. Furthermore, as the intensity is in general a sign of an active capacity, then the intention (necessity) of increase of territory is characteristic of the growing peoples which have an instinctive intention of populating all the territory, the whole Earth. Thus, *the intention of thrusting out all other ethnoses lies in the basis of the psychology of the numerous, growing ethnoses that have a great territory.* The growing powers which have an extensive culture can serve as instances. From this it also follows that *when there is an impulse the bigger the power, the more intensively it varies.*

III. The formula of relation of culture and number of population is similar to the preceding, i.e. $\Delta S = \Delta q \frac{S}{q}$ and $\Delta q = \Delta S \frac{q}{S}$, and they allow the following deductions.

When the culture varies,

(1.) The higher the starting culture, the less intensive is the variation of population ;

(2.) The lower the starting culture, the more intensive is the variation of population.

When the population varies,

(3.) The higher the starting culture, the more intensive is its variation ;

(4.) The lower the starting culture, the less intensive is its variation.

Thus, with the growth of culture there appears a more intensive reaction upon the variation of number of population. It may be noted that Malthus' principle,—the population grows in geometric progression and the means of existence in arithmetic progression, —was deduced at a historic moment of a very intensive cultural growth of England owing to the application of steam machines that resulted in a significant growth of population. This phenomenon when understood and formulated caused some confusion in the ideas of politicians, and Malthusianism as a reaction upon the growth of population. It is interesting to note that it was created just at the moment of the separation of the United States from the mother country, that from the ethnological standpoint meant loss of territory.

Owing to the above formulated principles it may easily be understood that the highly developed ethnoses are less stable when either the culture (growth and decline of culture) or the number of population vary.

Considering that *the intensity of reaction is characteristic of the active organisms, it is also characteristic of ethnoses to vary their culture not smoothly, but by jumps, so that this process may be represented graphically as a fractured line.*

With reference to Deductions (1) and (4) of Group I, Deduction (2) of Group II and Deduction (1) of Group III, it can be generalized that the maximum stability (small intensivity of variation) is characteristic of the ethnoses that have small territory and highly developed culture.

From the above proposition a series of deductions can also be drawn. For example, from the first equation $\Delta S = \Delta T \frac{S}{T}$ it can be seen that, *when the population does not vary, the stopping of cultural development happens, if* $\Delta T = O$. *Furthermore, as territory is limited, the culture has also its limit and as territory, generally*

speaking, is limited, the increase of population, when the culture does not vary, is also limited. Therefore, the instinctive impulse of enlarging the territory up to the limits is a natural feeling when the ethnos is growing (culture and number of population).

Whence it also follows that war is a natural phenomenon for a growing ethnos which manifests by this means its biological power. Thus, war is a purely biological function of ethnos which veils it by some ideological forms corresponding to the general cultural state of the ethnos.

Finally, as territory has its absolute limit, as well as has the density of population, limitless growth of culture is possible only by means of growth of territory, so that the growth of culture over the limit (when the absolute density will be attained and all territory utilized) will be followed by the loss of territory which will probably be occupied by another animal species.

The last proposition is evidently quite theoretical and the writer thinks, the end of the (present) human species (or genus) will run in other ways, because man as species (or genus) is subjected to general biological laws.

In the foregoing exposition the relations of factors (moments) have been analyzed, when there is some variation in the ethnos and when formulae of impulses are related to different moments in time, where q, S and T are taken for one moment and q_1, S_1 and T_1, for another one. The same formulae in their general forms and their variations can be applied to defining inter-ethnical relations. As it was already stated, the ethnoses can be compared, when they are classified by the same mode of evaluation, i.e., the quantity of population. But taking into consideration that the population may be used as a scale only when there is a similar culture, it is necessary to consider the culture as a moment (factor) forming the ethnical power. Then qS will characterize it. Furthermore, as territory is also a factor forming the ethnical power, it should also be introduced into the expression of ethnical power which will be $f=qST$. As $ST=\frac{q}{\omega}$, then $f=\frac{q^2}{\omega}$, i.e., *the ethnical power is equal to the square of the number of population divided by a constant.*

These quantities characterize the relation of two neighbouring ethnoses, both of which, as we may see, tend to spread over the territory where they also meet the opposition of the other ethnical units. The latter resist their spreading. Thus the ethnos are pressed by the neighbouring ethnoses, the value of which is equal to the sum of the impulses of variation. Let us suppose, there are two ethnoses one of which is seeking a new territory for its equilibrium, then another one can be forced to leave to the first some part of its own territory and compensate it by the growth of culture or reduction of population. If the compensation is impossible, then a pressure appears to which a resistence must be opposed equal to the inertia of the second ethnos and expressing its *ethnical value*. Thus, if there is, for example, a variation based on the variation of the quantity of population without variation of the culture, $\Delta T = \Delta q \frac{T}{q}$, then another ethnos opposing the movement of the first in the territory must enlarge its population, a part of which can be sacrificed for the defense of the territory (war). Expression of this pressure will be the impulse of variation of territory $\pm i_{sq} = \omega \frac{T}{\Delta T}$, which will reinforce its ethnical power $\frac{q^2}{\omega}$ by a corresponding quantity and its ethnical power will be $\frac{q^2}{\omega} . \omega \frac{T}{\Delta T}$. Then, if there are many neighbouring ethnoses some of which are variable in relation to territory, other ones in relation to culture and third ones in relation to population, the sum of these impulses will be

$$\Sigma i = \omega \frac{T}{\Delta T} + \omega \frac{S}{\Delta S} + \omega \frac{q}{\Delta q} .$$

Furthermore, as the ethnos may be pressed by several ethnoses which vary their q, S and T, then the sum of impulses will be,—

$$\Sigma i = \left(\omega \frac{T_1}{\Delta T_1} + \omega \frac{T_2}{\Delta T_2} + \cdots + \omega \frac{T_n}{\Delta T_n} \right) + \left(\omega \frac{S_1}{\Delta S_1} + \omega \frac{S_2}{\Delta S_2} + \cdots + \omega \frac{S_m}{\Delta S_m} \right) + \left(\omega \frac{q_1}{\Delta q_1} + \omega \frac{q_2}{\Delta q_2} + \cdots + \omega \frac{q_p}{\Delta q_p} \right) = \sum_1^n i_{sq} + \sum_1^m i_{Tq} + \sum_1^p i_{sT} .$$

To this pressure the ethnos opposes its power of resistance and this will be a correction to its ethnical power, so that the *actual ethnical power* will be $\varepsilon = \frac{q^2}{\omega} . \Sigma i$.

By this formula *actual inter-ethnical value of ethnos* is defined.

We shall not touch upon the possible combinations resulting from these relations. Some of them have already been shown in the foregoing exposition. It should now be noted that + and — can result in a progressing and regressing movement of ethnoses in relation to the territory, culture and quantity of population. They may take various forms known in biology under the names of *commensalism*, *cooperation* and *parasitism*, also in the form of *extinction*, *substitution*, *assimilation* and *amalgamation*.[1]

In the conclusion of the foregoing exposition it should be added that the writer does not consider the above formulae as final ones. These formulae are empiric ones and they must be revised, corrected and perhaps entirely changed. It is very likely that in the course of further investigations in this line the factors will be modified by some corrections, as, for example shown in the case of territory, their expression will perhaps be not so simple, for instance in square and so on. The principal aim here, however, is not to give final investigation, but only to propose the problem of the revision of our methodology, to outline possible ways of further investigations.

We have not dealt at all with the problem of the definition of the quantity of *S*. The definition of its numerical value must be the result of the work of many years and of many investigators. It should be noted here that one of the means of defining its value may be the quantity of the wealth gathered by the ethnos, the surplus of national production, the productivity of work and other phenomena the material evaluation of which is possible and which is at the same time a kind of materialization of immaterial relations resulting from the cultural development. As a way of finding the relative value of *S*, may be used the formula of *actual inter-ethnical value* where the undefined constant ω in the denominator is reduced with the constant ω of the Σi. If there are taken two ethnoses of

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1. The analysis of these forms is the contents of Chapter VII of the Russian original.

approximately similar culture then it is possible to define their *relative* ethnical value omitting *S*. Furthermore, from the comparison of two ethnoses, differentiated by *S*, and relative ethnical values already defined, the relative value of *S* may be found by reducing to the unit. By the same method may also be calculated the relative value of the components of *S*, and furthermore their *absolute* value.

CONCLUSIONS

FROM "ETHNOS"

In the proposed scheme the writer defines *the ethnos as a unit in which all processes of cultural and somatological variations of man as species (or genus) operate and which is understood by itself as a group of people united by the idea of unity of origin, customs, language and technical culture.*

1. *Geographical conditions*,—the relation of land and sea, climate, topography, flora and fauna,—*are primary for the ethnos milieu (environment) to which it adapts itself, subjugates itself and becomes its component, its derivate.* If these conditions vary, but the ethnos has not yet appropriated the capacity of an immediate adaptation, it results in the movement, or variation, or the ethnos perishes altogether. As examples of this kind may be taken the ethnoses following the reindeer that migrated northward with the movement of glaciers, and the ethnoses that after the extinction of forests in European Russia became agriculturists and appropriated the Russian cultural complex.

2. *The ethnos uses materials, which may be found about it, to manufacture the objects of technical culture,*—for dwellings, clothing, food and so on.—*The forms and technique of construction and production of them result from the properties of materials which being exhausted are usually substituted with other materials. Nevertheless the forms and technique are sometimes preserved.* Examples of this kind are the dwellings of similar forms in different regions, built with the same materials (the same properties of materials), also the forms of bronze axes and other utensils and arms of the eneolithic period which were reproductions of stone implements and created their own proper forms for this material during the following period; finally, the forms of arrows which vary in dependance upon the materials. Hence it follows that the ethnographical convergence is very possible and more common than may be supposed. The form of honeycombs of bees and wasps, the forms of underwater constructions of beavers in Europe

and Asia are similar, but it cannot be supposed that there is cultural imitation, appropriation and so on.

3. *In the region of habitation the ethnos adapts itself to the conditions resulting from the domestication of animals and follows the migration of animals or serves them while being in dependence on them*, all of which depends on the degree and character of the closeness of such relations. An instance of this kind are the reindeer ethnoses following this animal as it migrates in search of lichens, and on the other hand the cattle-breeders preparing hay and other products for cattle. The control over the domesticated animals may be established only, when the farm is adopted as a system of agricultural economics and the cattle is fed in stables. This innovation in the cattle-breeding changes also the mode of life. So that in this case it may also be seen that *man is subject to the factors created by himself.*

4. *With the course of development of technical culture the ethnos artificially creates some new materials*,—for structures, utensils, clothing, food and so on,—*to the properties of which the forms of constructions and all manufactured objects are due*, just as bees producing wax in the creation of structural forms are subjugated by the material, when they build their honeycombs; also like the swallow that forms its nest in accordance with the properties of the material produced by it. The history of architecture, the history of fire-arms and so on may serve as illustrations of this principle. Yet scientific technology is a consequence of the creation of new materials and as such it is a derivate of the material created.

5. *The feeling of superiority characteristic of the ethnos that creates new relations to the primary environment*,—exploitation of energy of the movement of water, that of latent energy of combustible materials and so on,—*and in particular new relations to animals and materials forms the consciousness of human power over nature and the consciousness of free will which are only the subjective understanding of this new function of nature, the creative capacity of man.* This factor in the ethnical consciousness takes a veiled and mystic form, just as all other natural manifestations in a low state of mental culture assume some mystic

explanation,— the arts and crafts are said to have been invented by different gods and heroes, as for example, the gods of ceramic art, cattle-breeding, iron work, construction of big buildings and so on,—which is now substituted by the mystic name of human "genius," science and so on.

6. *With the complication* (development) *of the relations of the ethnos to the secondary environment* (this created by man) *in its biological basis, as species* (genus) *a new form of adaptation is produced—social organization.* Depending upon the intensity of variation of the secondary environment the social structure may vary according to the principle of equilibrium, the breaking of which may menace the very existence of the ethnos. The process of variation of this structure finds its reflection in the mind of ethnos which chooses some explanation of it in strict accordance with its philosophy and logic. If the process of variation runs too fast or the possible explanation of it cannot be connected with the general philosophy, logic and degree of mental development, then the ethnos does not give any explanation which deprives the given social culture of its stability. Owing to that the self-understanding of the social structure must be in equilibrium and strict correspondence with the degree of the complexity and intensity of variation of this structure. This principle forms the limits of knowledge of the real nature of social structure and, on the other hand, the breaking of the said equilibrium and correspondence menaces the existence of the very phenomenon—social structure and the understanding of it—and, in consequence, the existence of ethnos itself. By this principle may be explained what is very common among the degenerating ethnoses—hyperthrophic development of interest in the ethic, social and political problems, which sometimes absorb the whole mind of the ethnos.

7. *It may be supposed that the principal organ assuring success in the struggle for existence in man is that or a group of those that produce his intellectual and psychic activity, and the process of differentiation of mankind is effected in accordance with these organs.* The concrete manifestation of their activity is human culture which assures to the man his numerical increase. Hence the

somatic differentiation left its place and importance to the differentiation based on the above named characteristics. This phenomenon calls to mind the differentiation of physiological functions non-resulting in somatological variations, as it may be observed, for example, among the Hessian flies.

8. *The human culture is a complex which among all ethnoses has always some stability in its structure—cultural equilibrium.* The variation of the structure of culture is possible only when the stability of the whole culture is preserved. If it is not so, it may result in the decline of its owner. In other words, when one of the components of culture varies, the others must also vary, but the preservation of some phenomena is possible, when it does not threaten *the cultural equilibrium*. So, the variation of the economic system is followed by the change in the planning of buildings, their location and the inner organization of the society; the variation of religious system is followed by the variation of economic and social activity of ethnos and so on.

Various forms of manifestation of this principle of cultural equilibrium were causes of the creation of several theories, as for example, "the relation of the idea and matter," "the rôle of the economic factor" and so forth.

9. *Ethnical equilibrium in its basis has the constant relation of the quantity of population, its culture and territory occupied by it,* the variations of which without preserving the equilibrium result in the decline of ethnos.

10. *Formation of the ethnos depends on the primary and secondary environment as well as on the ethnical environment,* i.e., the other ethnical units neighbouring it. The ethnos receives impulses of variation from its their neighbours which makes its relative weight go up and endow with it the capacity of resistance. So that *the ethnos being beyond the ethnical milieu loses its external impulses and in the sense of simplifying its relations with the environment it descends to a primitive state.* As illustration of this kind may be taken ethnoses which avoid contact with the ethnical environment, stopping thereby their cultural and sometimes even

physical variation. Such are also many individuals who are searching for their isolation and, avoiding the external reaction, *little by little lose their culture. Therefore, the psychic of such* ethnoses and people, isolated from the external pressure (influence), results in the creation of theories whose practical application to life is impossible (absenteeism of monks, sometimes the philosophy of some thinkers and so on). This psychology may also result in perishing of individuals and even of whole ethnoses, when they enter into relations with the external environment (ethnical milieu).

11. Ethnical stability is formed by the power of ethnos and the sum of impulses which it receives from the inter-ethnical environment, so that those form an ethnical value corresponding to every ethnos. Such a stability is also formed for the whole of humanity and is an expression of the degree of its inner closeness and, consequently, its capacity of resistance to the other animal species which might occur only at a moment of a controlling position of man as species (or genus) on the Earth. The division of mankind into the ethnical units (ethnoses) is a natural function which is at the same time an impulse of development of man as a whole.

From the above principles and foregoing exposition some deductions of a more general character may be drawn as now given.

I. *Development of ethnos is effected not by the complication of all phenomena composing the complex, but in the line of adaptation of the whole complex*—ethnographic, psychic, mental phenomena and so on—*with the view of preserving the ethnos*, so that simultaneously some phenomena may be developed (complicated) and some of them may be reduced (simplified) and some of them preserved in their original state, which, from the standpoint of the final movement of the process, have absolutely equal importance. The term "development," being applied to the ethnos, has also a meaning of "variation favourable for the future of ethnos" as it is used with reference to the "development of state," "development of species" and so on. By this term the writer defines

only *variations* operating in the ethnos. In every given case it is really difficult to know, if it has a "positive" or a "negative" influence (i.e. assuring the existence or the decline), as well as it is difficult to define the importance of variation of the ethnoses, if we refer it to mankind as species (or genus). For instance, the "death" of an ethnos for mankind as a whole may be a fact assuring the further development of mankind and the development of another ethnos may have the most pernicious influence on the existence of mankind. Therefore a subjective meaning of the term "development" in its reference to the ethnical notions must be rejected altogether and the process of variation must be evaluated and analyzed beyond their final influence over the social group, the ethnos and the whole of mankind.

II. *Ethnoses adapt themselves to the environment by two methods: first, by the variation of their habits and necessities or by variation of their organs and their characters and, secondly, by variation of the environment itself.* For instance, the ethnoses using iron, when there is no iron, may abstain from it entirely as did, for example, the Tungus of Siberia, after the political troubles in Russia stopped the iron utensil supply; or such an ethnos may begin the search for new iron-fields, as the ethnoses do when they migrate. In the first case they sometimes consider the phenomenon as degradation, but they lose sight of the fact that there might be simply a substitution of phenomena quite "positive" from the standpoint of this ethnos and without any loss in the final balance. I shall quote some instances of this order. In the far North of Asia several ethnoses, as for example, Chukchis, Koryaks and others invented very comfortable clothing, but the Tungus who probably came from the south have preserved their original clothing, very open and accomodated to a mild climate, and adapted their organisms to the new environment though they suffered and perished in great numbers. The same phenomenon probably occured to the inhabitants of the cold and rigorous Tierra del Fuego who use a small piece of skin to protect from the wind only that side of their bodies which is under the influence of the latter. Finally the Russian colonizers of the Yakutsk Government upon arriving in this region, where wheat cannot be cultivated, little by little made the soil cultivable and

acclimatized the grains, so that they now have good harvests. At the same time the Russian agriculturists in Mongolia (Eastern Transbaikalia) changed their principal food—bread—for meat and, having forgotten agriculture, became cattle-breeders. So numberless combinations may be observed among the same ethnoses in different regions, when they migrate.

Depending upon the degree of the culture, physical and psychical characters, of an ethnos there may develop a high stability and resistance of this ethnos and then its energy is spent toward the variation of its new environment. The migration into the cities of the Tungus and Yakuts from the mountains, and generally places isolated from the Russian cultural centres, presents very great dangers on account of the progressive tuberculosis and other diseases. The Negroes of North America, however, are already so acclimatized that they increase very easily in this climate and new conditions. Meanwhile the European colonizers in India acclimatize themselves to their new climate to such a slight extent that they are compelled to leave India periodically for home.

In order to avoid some misunderstanding it is necessary to add that it cannot be stated, as has been done by some authors, that the physical adaptiveness to the development of culture decreases, the culture itself being a biological function. Moreover, the period of observation on the physical variations for which we have reliable anthropological and ethnographical material, is too short in comparison with the whole history of mankind.

III. *The movement of the ethnos, when it spreads and lives, is always directed along the line of minimum resistance.* However the ethnos itself is one of the acting forces and, when it takes some decision (this is always a phenomenon understood partly or in whole by the ethnos), it is bound with (1) the external conditions (environment); (2) the sum of its knowledge (culture) and (3) its biological power. Thus, in one case the ethnos adapts itself, for example, in a river valley by populating the sides of the valley; in another case it goes up to the sources of the river; and in a third case it limits its increasing. This factor—the power of

ethnos, when it is in the process of variation—may explain to us many phenomena of ethnical life. From this standpoint the forms of the obstinate preservation of territory, once occupied, such as by intensification of economic organization or by military defense, are only *different forms* of the manifestation of ethnical power. So that with the growth of culture and biological power of an ethnos the components of its power vary, but when it is moving (varying during migration and development) one element may be developed at the expense of another one—a weak culture may be compensated by an intensive numerical growth, by a highly developed adaptiveness and so on. By virtue of the principle of its movement along the line of minimum resistance, temporary refusal to apply knowledge may occur. This cannot be considered as a degradation and decline, nor can a temporary decrease of population, when observed superficially or from some particular standpoint, always be considered as a sign of degeneration. But a real degradation, decline and degeneration may run absolutely imperceptibly, as for example, in the case when an ethnos is in the process of amalgamation with another one and loses its culture owing to the assimilation.

IV. *The understanding and knowledge of the relations of the ethnos to its environment, as well as the understanding and knowledge of processes of variation during the migration* (spreading over the territory) *and being of this ethnos compose its mental and psychic culture. The development of the culture depends before all else on the quantity of material taken for observation, which depends also on the degree of the complexity of relations and intensity of the processes of variation* (and movement). But at the same time this knowledge is a component of biological functions of the ethnos and owing to that during the existence of the ethnos it may be substituted by some other compensating elements. So that *in the struggle for existence the ethnos may use this element only in such a proportion as is necessary for the maintenance of its ethnical stability. Therefore, the intention of limiting a deep profound knowledge of the processes of the variation and relation of man to the environment is a normal phenomenon. Hence the tendency to even all the individuals who are superior from the intel'ectual standpoint is a normal phenomenon characteristic of all ethnoses which have a consciousness (or instinct)*

of self-preservation. A hyperthrophic development of this element, as well as its insufficient formation, insufficient for maintaining cultural equilibrium, may occur among the ethnoses that, in the struggle for existence, are yielding their place to the other ethnoses. Many instances of this kind occur, when the ethnoses, that are in the decline of their days wrap themselves into the depths of self-analysis and spend all their psychic and mental activity for this occupation. As differentiating this element from others it is an immediate product of the principal organ assuring the success of the ethnos in the struggle for existence—intellect—and it bears in itself a germ of self-development and death, which results also in a decline of this phenomenon and, with this, the decline of ethnos.

V. *In so far the movement of ethnoses allows us to see, the future of man has some limit. In the approach to this, either the culture will stop its further development (complication) or the territory will be reduced, which is equivalent. In both cases there will be a degeneration, decline of ethnoses, the end of the present species (or genus) of man.* In comparison with other animal species, it may be supposed that (1) the present human species will have a shorter duration of existence than other animal species; (2) the end of this species (or genus) will be caused by the impossibility of adaptation to the new primary environment which will succeed the present; (3) the immediate manifestation of the end of man will probably assume the shape of hyperthrophic development of culture and of the very organs that assure now his existence, and this function will stop a normal function of other organs; (4) it may be supposed that the form of stoppage will be intervention of man into the natural function of self-reproduction, i.e., conception and birth of posterity. At the same time the physical adaptation of the organs that vary occurs more slowly than the variation of the organs themselves and the human species (or genus) will probably not have time to adapt itself physically (intervention into self-reproduction).

Should we try to define what length of time can be expected for the existence of humanity, we must draw our conclusion from the past. Man under the conditions of a very intensive increase

populates the whole earth, but in the present state he has been living some 6-8000 generations. The period of the most intense activity (from the beginning of the metallic era) has been only about 300 generations in duration. From this it may be supposed that the great part of the way to the absolute density of population (if we consider the intensity of increase) is already over. From the above it may be supposed that mankind at present is very near its point of culmination. If it is not able to produce a new species (or genus) which can adapt itself to the new conditions, it will be doomed to perish without leaving any posterity as have perished, for instance, the ammonites.