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## THE CHANGING EFFECTS OF RACE COMPETITION<sup>1</sup>

By Professor S. J. HOLMES

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THIS evening I shall invite your attention to certain aspects of the contemporary evolution of our own species. In so doing I am sure that I need make no apology, especially since our society, through its traditions, is concerned with the general problems of organic evolution. Most of my hearers will doubtless recall the well-known address delivered by Professor Thomas H. Huxley on "The Struggle for Existence in Human Society." In venturing to discuss some aspects of this same subject I can not hope to emulate the clear and forcible presentation of this master of scientific exposition. Human rivalry takes on different forms as the years go on, and it is chiefly for this reason that I have chosen my present theme.

Man, like all other forms of life, is subject to the

struggle for existence. He is exposed to the action of the various selective agencies which operate elsewhere in the organic world. Although selection acts upon all organisms, the way in which it acts, and whether it causes advancement, degeneration or mere lateral divergence, depends upon the peculiar circumstances under which an organism lives. The study of the influence of the selective agencies operating in the human species involves one in many complex problems. In man evolutionary changes are taking place with extraordinary rapidity. Probably nowhere else in the organic world is there a species which is undergoing such wide-spread and extensive modifications. Man is not only characterized by a degree of hereditary variability scarcely equaled by any other form of life, but he is subject to the operation of selective forces whose incidence varies greatly from place to

<sup>1</sup> Address of the president of the American Society of Naturalists, New Orleans, December 31, 1931.

place and from time to time. If we would understand the way in which the inherent qualities of human beings are being changed, for change they must, we must gain some insight into the action of the selective forces which determine what types of human beings have the greatest net rate of natural increase.

We are accustomed to look upon the struggle for existence as taking place according to a very simple formula. Organisms compete with one another; on the whole, the strongest, toughest or most intelligent survive and transmit their better adapted variations; and so the species comes slowly to be better fitted to its conditions of life. All this is very natural and obvious. But especially among us humans, matters do not work out so simply. Human survival and increase are conditioned by many factors which are not ordinarily included in our concept of the struggle for existence. The kind of human beings which tend to prevail may, for instance, be determined in part by religion and many other phenomena of our social inheritance. Social forces determine to a large extent how biological forces act, and as these social forces vary so greatly with time and place, the biological evolution of man comes to be influenced by a variety of factors which are non-existent in animals below man.

In considering the workings of selective survival in man we should distinguish between the operation of selection within groups from the operation of selection between groups. Both kinds of selection are actively working among human beings. The contention of many writers that natural selection has been practically done away with through the arts of saving life is, I am convinced, quite unjustified, and I have elsewhere defended the view that under present conditions of civilization natural selection is in several ways working more actively than ever before. However, although I may be alone in this opinion, I shall not defend it here, since my chief concern at present is with a somewhat different aspect of the problem.

Organized societies of animals behave as units in the struggle for existence. One group may drive out or exterminate another. We may therefore look upon evolutionary advance as resulting partly from improvements within each group and partly from the successive replacements of inferior by superior groups. The important rôle of group selection in man seems to have been first emphasized by Mr. Walter Bagehot in his original volume entitled "Physics and Politics," although the general doctrine had been stated by Darwin in his attempt to explain the genesis of the instincts of the hive bee. The concept of group selection came as a welcome adjunct to the theory of natural selection in its original form, because it sup-

plied a plausible explanation of the genesis of many traits which could not be accounted for simply by the preservation of variations useful only to their possessors. The employment of the idea of group selection to explain the development of mutual aid, social sympathy, self-sacrifice and the various social and domestic instincts which make for effective cooperation is, of course, familiar to all students of evolutionary theory. The idea has bulked large in the writings of the so-called Social Darwinists. It has figured prominently in the literature of evolutionary ethics, and now and then it is given some consideration by the historians. Group selection in man is seen in its clearest form in the conquest and extirpation of one tribe by another. It is vividly illustrated in the wars of extermination waged by the Children of Israel against the unfortunate tribes who were not in the good graces of Jehovah. In this conflict of tribe with tribe which has gone on throughout untold ages we may assume that groups whose members were more intelligent, cooperative and willing to make sacrifices for the common welfare were, on the whole, successful. But intertribal struggles, to have evolutionary significance, must lead to replacement of the vanquished by their victorious competitors. The extent to which the replacement of stocks actually results from intertribal conflict varies greatly with the development of culture. Frequently the biological advantages of victory are partly nullified through the mingling of the blood of the victors and vanquished. With the advance of civilization humanitarian considerations commonly prevent the extermination of unsuccessful contestants. Where, however, conflicts occur between peoples on very different cultural levels, victory often affords an opportunity for the expansion of the more advanced group. The Anglo-Saxons have achieved remarkable biological success as a result of their conquest of more primitive peoples whom they found to be in the way. The proponent of the biological value of war can find good support for his thesis in the military career of this enterprising people. Many of the defenders of war on biological grounds are prepared to concede that the effects of military selection in removing the physically best of the male population are on the whole dysgenic, but they claim that the replacement of inferior by superior groups more than compensates for this influence. In wars between modern civilized states this replacement does not usually occur. The effects of victory are economic and political rather than biological, and the vanquished are as apt as not to increase more rapidly than their conquerors. It would puzzle one to discover any great biological advantage resulting from most European wars. People do not wage wars to promote the biological advancement of their species. They behave as if they

were pawns in a game, blindly following the impulses of greed, ambition and collective pugnacity. Racial advancement may be Nature's aim, but it is not man's.

If conflict has played an important rôle in the evolution of the human species, it seems apparent that at present it has mainly outlived its biological usefulness. This does not imply that group selection is no longer operative. The racial replacement that goes on in a peaceful and generally unobtrusive manner has probably been for a long time a more potent factor in human evolution than the more spectacular but less frequent occurrence of conflict. Throughout the organic world natural selection generally works in a quiet and decorous way. Where two stocks occupy a common territory one inevitably tends to supplant the other, even though they live in most peaceful relations. The extent to which they compete as groups, however, instead of as individuals is subject to much variability. Theoretically, one may readily distinguish between individual selection, which preserves the fittest organism, from group selection, which leads to the survival of the fittest group. These two forms of selection tend to develop quite different characteristics, the one enhancing those which conduce to the preservation of the individual, the other developing characteristics making for race or group preservation, and sometimes even leading to the sacrifice of the individual life. The instincts which impel the warrior ant or termite to sacrifice itself in the defense of the colony could never have been developed by selection acting upon the individual alone. In individual selection survival depends upon the organism's own characteristics; in group selection it may depend upon the characteristics of other members of the organized society. Whether or not a queen bee survives may depend not directly upon her own peculiarities, but upon the behavior of the workers, and whether or not the workers survive may depend upon the peculiarities of the queen.

In our human relationships our chances of survival hinge in many ways upon the reactions of our fellows, but the relations of individual selection and group selection are nevertheless frequently obscure. In the first place, a human being may belong to a number of different groups at the same time. He may be a Democrat, a Baptist, an Odd Fellow and a member of the carpenters' union, and in these several capacities he will be associated with quite different individuals. To a certain extent his relation to these bodies may affect his chances of survival, his choice in marriage and the number and quality of his children. These several organizations are not, it is true, natural groups, such as the societies of ants and termites or even primitive clans of man. Nevertheless, they count for something in shaping the biologi-

cal evolution of the human species. A religious sect, for instance, which attracts a certain type of adherent and instils the virtue of fecundity, may function more or less as a unit in competing with other sects and may in time have an appreciable effect upon the hereditary composition of the population. The effort to disentangle the relations of group selection and individual selection in the complex interrelationships of human society brings us into contact with many baffling problems. As a matter of fact, the struggle between different racial stocks that goes on in the peaceful concourse of social groups eventuates in neither form of selection to the exclusion of the other. In their relations to mortality and fecundity, as in many other affairs of life, people function partly in their individual capacities and partly as members of the groups to which they belong. Group membership itself is subject to frequent changes. The rivals of one period may become the allies of the next, a fact which has a profound influence upon the biological effects of racial contacts. How important this influence is may perhaps be better appreciated after we consider briefly how racial contacts are working out in various parts of the globe.

For many years following the first advent of the white man the native Polynesian and Melanesian peoples of the Pacific have shown a striking decrease in numbers. Up to within the last few years various writers have predicted the complete extinction of the native inhabitants of many islands of the Pacific area within a relatively few decades. The Tasmanians are completely gone; the inhabitants of other islands have been reduced to a small and dwindling number, the native Australians, according to the best estimates, have decreased in numbers in face of the advance of the whites. The white man has proven a deadly scourge to many peoples with whom he has come into contact. His epidemic diseases, such as tuberculosis, measles and smallpox, have decimated the ranks of several primitive peoples. His dissemination of venereal infections has seriously checked rates of natural increase. His alcoholism and other vices have contributed to his destructive influence, and his ruthless exploitation of labor and the disturbance of the sex ratio through the transportation of workers have often proven a potent factor in causing native peoples to decrease in numbers. Whenever the white race first comes into contact with primitive peoples its biological influence is usually bad. This fact is well illustrated in the contacts of Indians and whites in the history of our own country. The whites desired the lands possessed by the Indians. The Indians for the most part could not be made to work for the whites. While some trading went on to the advantage of both parties, the whites and Indians were

essentially antagonistic groups, and often engaged in wars, which resulted in the replacement of the Indians by the conquering race. To a large extent the American Indian has remained outside the social organization of the whites, a member of an alien and essentially hostile group. To an even greater extent this alien status has characterized the native blacks of Australia, who have been on much the same basis as the other members of the mammalian fauna.

The issues of the contact of whites with such peoples as the American Indian and the native Australian afford a typical illustration of the working of group selection. Each group keeps largely to itself. Within each group the members aid one another in various ways, but there is little solicitude for the welfare of individuals who are outside the fold. Each group operates more or less as a whole in competition with others. As a result of competition, if not actual conflict, the group which is more advanced in culture, whether or not this implies a superior heredity, tends to prevail over and replace the less fortunate group. For the last few centuries the white race has been extraordinarily successful in the struggle for supremacy and expansion, and many native races have been wholly or in part replaced by their white rivals. The so-called yellow peril has not been nearly so portentous as the white peril has been to most peoples on the globe.

Nevertheless, in several parts of the earth the history of interracial contacts has recently passed, and in others will probably soon pass, into a different phase. In his Romanes lectures on "The Relations of the Advanced and Backward Nations of Mankind" Mr. James Bryce remarks:

Our own time stands eminent and peculiar in this, that it marks the completion of a process by which all the races of the world have been affected and all the backward ones placed in a more or less complete dependence upon the more advanced. India, northern Asia, the Indian and Polynesian archipelagos, the Philippine Islands now own civilized masters of European stock, as do all the aboriginal races of America. Turkey, Persia, Afghanistan, Siam and, in a sense, even China, are overshadowed by European powers and prevented from passing under the control of some one or more of these only by the jealous vigilance of the others. The same forces or motives have worked to bring this result about which have induced the conquests of earlier days. But two new factors have been more active and pervasive than ever before—the desire of civilized producers of goods to secure savage or semi-civilized consumers by annexing the regions they inhabit, and the rivalry of the great civilized states, each of which has been spurred on by the fear that the others would appropriate markets which it might win for itself. The process has been much swifter than was desirable in the interests of either con-

queror or conquered. But we can now see that it has become inevitable so soon as the progress of science had prodigiously increased the cheapness of both production and transportation.

This change, as Mr. Bryce points out, is giving the world a new kind of unity in which primitive peoples are taking positions analogous to those held by unskilled workers in civilized nations. The native peoples are becoming integral parts of the white man's economic order. "Such an event," Mr. Bryce remarks, "opens up a new stage in world history, a stage whose significance has perhaps been as yet scarcely realized either by the thinker or the man of action, because the historical thinker sometimes overlooks the present in his study of the past, while the man of action may be so much occupied by the present as to forget what the past has to teach him." The situation which Mr. Bryce describes is of great interest not only to students of economics and political science, but also to the biologist who is interested in the course of human evolution. It indicates a change in the course of biological development as marked as the change in the trend of political and economic history.

One of the most obvious biological effects of the extension of control over less advanced races is an increased stimulus to migration and race mixture. For long ages the evolutionary changes in the human species led to a continual divergence and redvergence into varied racial stocks. Through the effects of isolation and selection mankind has been broken up into innumerable subdivisions inhabiting different regions of the earth's surface. The geographical distribution of human races and peoples indicates that the process of speciation in man has followed much the same course that has led to the formation of races, subspecies and species among the lower animals. Whatever race fusion may have occurred was quite insufficient to counteract the evolutionary forces making for divergence during the early history of mankind. Now the course of development has been changed. The long period of divergence is being followed by a period of convergence. Peoples are mingling their blood to an extent that was unprecedented in previous history. Our greatly improved means of travel render extensive migratory movements relatively easy. Scarcely a tribe in the remotest islands of the Pacific is suffered any longer to lead a completely isolated existence. During the last few centuries the whites have not only spread into various regions of the earth and mingled their blood with native peoples, but they have caused great translocations in the populations of the countries subjected to their domination. Through their influence we find Hindus in South Africa and

Fiji, Negroes in Brazil, the West Indies and the United States, Chinese in the Philippines and Africa, and Filipinos in the United States and the various islands of the Pacific. Their development of the rich natural resources of Hawaii has caused an influx of hordes of Japanese, Portuguese, Chinese, Koreans, Filipinos, Porto Ricans, Negroes, and various other groups, forming a polychrome mass of humanity probably more diversified than the population of any other region of equal area on the face of the globe. All sorts of crosses are made in this seething cauldron of heterogeneous humanity. But this example is repeated to a less conspicuous degree in many other parts of the earth. It seems likely that with increasing trade and communication, together with the development of the relatively unutilized resources of many lands, the mingling of distinct racial stocks will go on at an accelerated pace.

The effects of white domination, in addition to accelerating race fusion, has in many parts of the world come to exert a more important influence in promoting the increase of native peoples. The unfavorable effects of contact to which we have referred may be only a temporary phase characteristic of what we may call the exploring and settling stage in the development of interracial relationships. This stage is well illustrated by the wide-spread depopulation which has been going on in Polynesia and Melanesia. But despite the predictions that many native peoples of the Pacific islands are doomed to extinction, we find that in several areas the natives are now increasing in number. The Maoris of New Zealand, who have long figured as an example of a disappearing race, have been increasing for some years. Since the beginning of the census enumerations in 1857-58 the Maoris continued to decrease up to near the beginning of the twentieth century. After this the five-year censuses have shown a slow increase of the Maoris, an apparent exception being afforded by the census of 1916, which indicated a decrease of 535 over the preceding period. This, as was explained in the census report, was due to the great war. The last five-year period showed the greatest increase of all. The half-castes, which were separately enumerated, are also increasing. The last (1931) Year Book of New Zealand states that "during the last few years the natural increase of the Maori population has exceeded that of the Europeans."

Notwithstanding the enormous hordes which have come into the Sandwich Islands, the native Hawaiians, after a long period of diminishing numbers, have recently been slowly gaining ground. The unmixed Hawaiians, however, have been decreasing, although at a diminishing rate, but if the mixed population is counted at only half its number the Hawaiians would

show an increase during the past two decades. Likewise, the natives of Fiji, who have been for a long time decreasing, and who have recently had to compete with a very extensive influx of Hindus, have begun to show a small surplus of births over deaths. The downward trend of population has been turned also in the Tonga Islands, the Carolines, New Britain, the Admiralty Islands and in many smaller areas. Mr. Roberts, in his volume on "Population Problems of the Pacific," estimates that of the total island population of the Pacific area 35 per cent. is increasing, 39 per cent. is stationary, and 25.5 per cent. is decreasing, with .16 per cent. faced with an immediate prospect of extinction. These figures relate only to the endemic peoples of these islands. It is a rather striking fact that the downward trend of native population has been stayed in face of a very extensive recent invasion by peoples from Asia, especially Chinese, Japanese, Koreans and Hindus. In 1923 about two fifths of the population of Fiji consisted of Hindus, most of whom had migrated into the islands since 1900. Throughout the Pacific area there is a great demand for labor. The resources of many islands are largely undeveloped, and it may be expected, therefore, that the inpouring of Asiatics will continue and that the spectacle of Hawaii will be repeated in many islands.

If we seek an explanation for the wide-spread trends of population in the Pacific area, we can detect the influence of several causes. For the most part they may be summed up as the result of the changing relationships of native races to the dominant whites or other ruling peoples. It is coming to be realized that the native populations of the islands are a valuable economic resource which it pays to conserve. The period of forcible recruiting of labor is past. Conflicts with native peoples have practically ceased. The lawless brutality that only too often resulted in much loss of life is rapidly passing. Wise administrators are endeavoring to understand native customs and to adopt more intelligent and considerate methods of control. The natives are not only learning much from their contacts, but they are securing the advantages of hygiene and sanitation instituted by their rulers and which compensate in a measure for the deleterious effects of the diseases with which the white man has presented them. A factor of especial importance, however, is the development of the resources of the islands, which makes possible the support of a much larger population than could formerly gain a subsistence. Natives are adjusting themselves to the economic and social organization of the more advanced races. The original antagonism is gradually changing into mutual and advantageous cooperation. In short, symbiosis is succeeding hostility. Instead of being a

scourge, the dominant race is a positive aid to survival. The natives are helped because they are coming to be a part of the white man's group.

Similar changes are occurring among the native peoples in other parts of the world. What statistical data we have on the native population of the Union of South Africa show an increase of the indigenous Bantu inhabitants, together with an increasing number of mixed breeds and incomers from Asia. The first effects of the invasion by whites in southern and especially central Africa were notoriously unfavorable to the increase of native peoples. Between war, the recruiting of slaves, the introduction of diseases and the demoralization of native customs, the Negroes suffered heavy losses, and in some parts white occupancy still exercises a baneful influence on the black population. As General Smuts remarks in his recent Rhodes lecture, "It is unfortunately the fact that throughout much of the African continent the native population is not increasing, and in some parts like Angola and the Congo it is definitely declining. The part of Africa in which the native population is increasing most rapidly within the last six years is the Union of South Africa, and that fact is a great tribute to the blessings of a settled European government, to the favorable economic conditions which render such an expansion possible, and to the medical care and welfare work carried on among the natives." In other parts of Africa the bad effects of the white invasion still predominate. According to a recent report on labor conditions in the Belgian Congo, the birth rate of the natives has fallen off to such an extent as to threaten the loss of man power needed in the industrial development of the region. The methods in vogue for recruiting labor are severely criticized in this report, and a plea is made for the employment of more humane and intelligent management of the Negro population in order to prevent the gradual loss of this valuable financial asset. The report is of interest in evincing a somewhat belated recognition of the value of policies which have elsewhere proven effective in conserving the supply of labor.

The British administration of India has led to a rapid growth of the native population, the last census showing an increase of some thirty million during the preceding decade. Since 1800 the indigenous population of Java has increased over tenfold under the administration of the Dutch. The Filipinos have about doubled in number since the United States came into control of the islands in 1898. The growth of the population in the West Indies is to a large extent the result of the development of the resources of these islands under the guidance of the whites. From the standpoint of racial replacement these

islands have an interesting history. The inhabitants of Jamaica, Haiti, Guadalupe, Martinique and the Barbados are now mainly blacks. The ruthless exploitation of the Spaniards greatly reduced the native Indian population of these islands, and the African slaves who were imported as a substitute for the natives were more successful in adjusting themselves to the economic régime of their masters. They thrived under white control and resorbed or replaced most of the natives who remained. Now the biological victory is clearly in the hands of the black man. The Caribbean has now become a great spawning area of black humanity from which numerous immigrants migrate into Mexico, Brazil, Venezuela, Colombia and Central America, where they contribute to deepen the shade of the mixed inhabitants of these countries. Several thousand have come into this country and we have at present no regular means of checking their influx.

Turning to our own race problem, we find that the trend of our Negro population is in some respects similar to that of native peoples in other parts of the globe. During the period of slavery, both master and slave profited from their association, and the Negroes multiplied at a rapid rate. After emancipation the Negroes became a more independent and, in some respects, antagonistic group. Being deprived of the care and supervision by their white masters, the Negroes came to suffer from an increased death rate, and their high birth rate began to fall. Sometime in the '80s the mortality of the Negroes began to decline, but the decrease of the birth rate caused the rate of natural increase to be reduced to such an extent that several writers have predicted that our own race problem would ultimately solve itself. Our Negro population never reached the stage of actually decreasing in numbers, but it came very nearly doing so. It has succeeded in establishing itself so that the advantages it secures apparently more than overcome the tendency of white competition to drive it to the wall. Advance returns of the latest census (1930) show that, after a period of diminishing rate of growth, our Negro population has come to increase at a more rapid rate. Between 1910 and 1920 the percentage of increase among the Negroes had fallen to 6 per cent. Between 1920 and 1930 the increase had risen to 13 per cent., or over double the rate of the previous decade. Even if, as has been maintained, many Negroes were not enumerated in the Census of 1920, it is scarcely credible that the number would be sufficient to account for the changing trend in our Negro population shown by the latest census returns.

This favorable turn in the biological fortunes of the Negro has taken place in spite of some untoward

circumstances. Chief among these is northward migration, which has certainly caused at least a temporary check in the natural increase of the migrants. Up to within recent years the opinion seemed to be well grounded that the Negro could not survive in the North. Deaths exceeded births among the Northern Negroes, and the growth of the Negro population in the Northern states has therefore been due mainly to migration. The black armies which have been pouring into the North have been marching to their own destruction. The first effects of the war migration were particularly unfavorable. Families were frequently broken, marriage was often deferred, and the difficulties of establishment in the new environment created a strong temptation to limit the family among married couples. But living conditions gradually improved. Negro mortality, and especially infant mortality, decreased, and now for several years the birth rate has been rising. The Negroes bid fair to succeed in adapting themselves to a northern climate and to increase through their own birth rate. They are gradually becoming immunized to tuberculosis, and they may come to constitute a larger and larger part of the moderate standard stratum of society which contributes most plentifully to the birth supply.

The restriction of immigration has greatly stimulated the northward trek of our Negro population. Not only unskilled labor, but much of the semi-skilled and skilled labor in our Northern centers of industry is being supplied by Negro workers, as it is in South Africa. As a whole, the Negroes, especially in the North, are becoming more and more an integral part of our social and economic organization. In some respects they do not belong to our group, but in other and very important respects they do, and this fact will have an important bearing on their future biological fate. They are reaping increasing rewards from the whites, not only economically, but also in the field of hygiene and sanitation. After a period of neglect, when the Negro was treated as an outsider to whom no obligations were due, there is coming to be more solicitude for his well being. It is distinctly possible that with change of relationship to the dominant race our Negro population, like the native peoples of the Pacific islands and other parts of the world, will take on a new lease of life.

It is to be regretted that our knowledge of the vital statistics of various peoples on the globe does not permit a more accurate estimate of their relative rates of natural increase. Over large areas of the earth's surface we have only very rough estimates of the number of existing inhabitants, and we know still less of their number in times past. Certainly, the white race has increased much more rapidly than the colored races, and it is probably doing so at the pres-

ent time. Nevertheless, the increase of the colored races has been to a large extent the result of the enterprise of the whites. Mr. Lothrop Stoddard's picture of the rising tide of color may not be so alarming in view of the present expansion of the white race. But if the whites are now gaining on their rivals they are scarcely justified in contemplating their future with entire complacency. Present rates of natural increase are of less importance than the kind of relations which are developing between the different races. It may well be that these relations may come to be such as to foster, much more than in the past, the increase of the relatively primitive members of a common social and economic organization. At times these relations may be symbiotic in all senses of the term. In a population of suboptimal density both a dominant and a subject race might increase more rapidly as a result of their association, but with increasing density of population this relationship changes. Although each race may contribute to the material welfare of the other, they may soon come to be rivals in reproduction in that the increase of one race will tend to check the increase of the other. And then symbiotic relationships may continue to exist between the low standard race and the employing class of the dominant race, but the relationship between the laboring populations in both races may be on a more competitive basis. Biologically, this kind of rivalry is particularly destructive to the race with higher standards of living. This fact was strikingly illustrated in the recent Mexican invasion of the Southwestern United States, where white labor was driven out of one industry after another by cheaper Indian labor from Mexico.

The fact that the interests of the employing classes are often opposed to the biological interests of their group as a whole makes the solution of many population problems a matter of great difficulty. The employing classes are politically powerful and their influence is apt to dictate the policy of the country. So long as their own welfare is enhanced by an alien element of the population, their influence will be exerted in favor of the aliens at the expense of the laborers of their own race. This same tendency is observed in the attitude of employers in South Africa, as it is in our own land. The Negro problem in South Africa is coming to be in many respects curiously like our own. Dr. J. W. Gregory, in his book on "The Menace of Colour," remarks, "The most ominous change in South Africa is the replacement of whites by blacks in many departments of work. The difference in South Africa between 1893 and 1905 which impressed me most deeply on visits in those years was the extent to which colored men had replaced white workers in many occupations. As the black man enters various branches of agricultural

and industrial occupations the white man goes out." The capitalists as a rule favor the policy which gives them the cheapest labor, regardless of the future of their own stock, just as they do in this country and everywhere else. Hence, they frequently incur the not unjust reproach of constituting the most effective enemies of their own race. According to Stevens, colored and Negro artisans by 1911 were in the majority in such occupations as blacksmiths, iron founders, brick workers, stone masons, carpenters, shoemakers, tailors and harnessmakers. Naturally, the white population is feeling acutely the pressure arising from the incorporation of the blacks into their own economic group. In proportion as the Negro succeeds in industry, in that proportion does he become a menace to white labor and the supremacy of the white race.

The tendency of industrial development to cause dominant peoples to be swamped out by the descendants of more primitive stocks who are utilized as laborers is one which every wisely governed people should consider with great care. Australia and New Zealand have saved themselves, at least temporarily, from being replaced by hordes of Asiatics before it became too late. Just as bad money drives out good money, so a low standard population tends to drive out a high standard population. How many dominant stocks have invited their own destruction by the importation of aliens to do the hard work I shall not presume to state. Dominant peoples naturally desire to avail themselves of the labor of less advanced races. Where the whites are able to administer dependencies inhabited by the colored races and to profit by the trade which results from such control, they may be enabled thereby to increase their own population and welfare, at least for a considerable time. This policy of exploitation has contributed not only to the increase of the white race, but it has aided also the increase of its rivals. It has led to the formation of many kinds of groups based on relationships of mutual dependence. The material needs for the support and increase of one people may be sup-

plied by natives in a remote quarter of the globe, so that we may have economic groups functioning more or less as units composed of natives in England, South Africa and Japan. It is largely the advantages which Japan has derived from Western culture since her former isolation that accounts for her phenomenal growth of population, which now adds about 800,000 annually to her already overcrowded area.

It is often said that the world is becoming an economic unit. Rather, it is a collection of units exhibiting various degrees of unity. Relative rates of population growth, migration, hence, the kind of racial replacement that goes on, and, hence the direction followed in biological evolution of various subdivisions of the human species, are to a large extent determined by the group relationships which develop as a result of the scramble for wealth. The student of the present evolution of our own species must concern himself not merely with the struggle between individuals or even neighboring groups, but with far reaching influences which tie together in bonds of common interest peoples of remote quarters of the globe and of most diverse racial extraction. And along with these new relationships of interdependence are developing new kinds of rivalry whose outcome can be only dimly foreseen.

In the present period of the world's history the white race, after having spread over and exploited very considerable portions of the earth's surface, and after having wrought unspeakable havoc as a result of its domination, has now come to minister to the welfare of its colored cohabitants, because it is finding them a valuable financial asset. At the same time, the whites must be credited with doing more for the less advanced races from motives of pure philanthropy. It may be financially profitable for a time to encourage population growth in alien lands. That many new kinds of competition will develop as the result of this policy seems inevitable. We have done much toward helping the meek to inherit the earth, but when they have come into a larger share of their patrimony they may not always be so meek.

## SCIENTIFIC EVENTS

### CONVICTIONS IN THE CALMETTE SERUM TRIAL

ACCORDING to a special cable to the *New York Times*, judgment in the Calmette serum trial, which opened on October 12, was rendered on February 6. Of the four defendants Professor Max Klotz and Anna Schuetze, a nurse, were acquitted. Professor Georg Deycke was sentenced to two years in prison and Dr. Ernst Altstaedt to fifteen months for homicide and inflicting bodily injury through culpable

negligence. Dr. Deycke and Dr. Altstaedt were acquitted on a count charging the same offense in the introduction of the Calmette treatment in Luebeck.

In an oral opinion Presiding Judge Wibel said that the deaths of 68 of the 76 children who died of tuberculosis in the spring of 1930 and the illness of a majority of 131 survivors who then contracted the same illness were attributable to their inoculation with virulent tuberculosis bacilli inadvertently introduced into the Calmette vaccine. While the court admitted