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The Aryan Doctrine

HOWEVER much we may feel assured that ultimately truth will prevail, in the practical affairs of life it often befalls that we must watch the dry light of reason pale and flicker in the hot breath of a theory which, illogical and perversive of fact though it may be, appeals to the emotions, the passions and the interests, of the uninstructed, but socially and politically powerful, elements among mankind. The dogma of the Aryan race, which recently has burst like a shell over an astonished world, though formulated on a view of racial affinities fundamentally obsolete and a biased interpretation of archaeological fact, with the aid of the mystic symbols of the swastika, the arm raised in salute and a Messianic leader, has swept Germany off her feet by setting up an ideal, which recalls the ancient glories of the Germanic peoples in a period of political and economic depression, and holds out a promise of their revival through a racial regeneration.

It is unfortunate, but true, that an ideal theory which can mould facts to its purpose holds the superior strategic position. The populace is ever impatient of the impartial attitude of a scientific investigation of fact, which must often, by the qualification and limitation of its conclusions owing to imperfect knowledge, provide a check rather than a spur to immediate action. In the discussion of the population problems of the United States, it is the voice of the facile theorist which has been heard, while the scientific investigator of race, who refrains from dogmatism pending fuller inquiry, is still crying in the wilderness. In Germany, any who in their teaching might have been able to criticise the officially accepted view of the racial origins and character of the German people, have been forbidden to lecture on race on the ground that they are unfitted to meddle in an affair of so great practical moment.

Happily such restrictions do not run outside Germany, and although the anthropologist is not concerned with political propaganda as such, when racial theory is invoked in support of social and political action, the basis of argument must be such as will stand the test of scientific examination. The Aryan race doctrine as now held in Germany rests upon concepts, assumptions and theories hitherto generally regarded as untenable or discredited, and until recently accepted only by a few. Mainly they were familiar as the stock-in-trade of popular writers and semi-journalistic publicists

during and after the War. Notwithstanding their popular vogue and certain repercussions in the political world, scientific opinion had not been disposed to regard these concepts with any great degree of concern until their adoption as one of the main driving forces in the Nazi movement attracted a more widely diffused attention.

But contagion spreads; and when a British Cabinet Minister thinks it desirable to affirm his Aryan extraction, then the doyen of anthropologists, the president of the Royal Society, and a leading exponent of the biological study of race, may well combine to protest against the revival of a scientific heresy. The letter from Dr. A. C. Haddon, Sir F. Gowland Hopkins and Prof. J. B. S. Haldane, which appeared in the *Times* of August 7, is an opportune admonition to others, beside Sir John Simon, that men of science outside Germany cannot accept a political faith in the guise of scientific theory without reference to its relation to scientifically assured fact.

It was disastrous for Germany that the first step she elected to take in national regeneration through racial integration should have assumed a form which alienated liberal opinion throughout the whole world, at a time when the racial theory upon which it was based was neither well nor widely known. The crude statement of Nazi argument for discrimination against the Jews on the ground of racial inferiority appeared absurd and almost carried its refutation with it. Apart from the impossibility of analysing the culture of modern Germany in terms of the racial elements of her population—a task from which even the most rash of racial psychologists might well shrink—it was shown time and again that the unquestioned eminence of Germany in the arts and sciences was due in no inconsiderable measure to her nationals of Jewish extraction and descent. It is difficult for an onlooker to appreciate the attitude of mind which can so far run counter to the logic of facts as to impute racial inferiority to the Jew. It has all the appearance of the crudest race prejudice. Germany, however, with a thoroughness that is characteristic, especially in its lack of humour, justifies her action with an appeal to first principles. The Jewish type and Jewish mentality, with its proclivity to socialism and internationalism, it is argued, is incompatible with the German type. But this German type is an ideal type, evolved, like the camel in Heine's story, from the Teutonic inner consciousness and projected into the past, as so often happens with

an ideal. It is, in fact, the familiar illusion of the Golden Age; and race prejudice has been transformed into an inevitable measure of purification in the endeavour to recreate a hypothetical ancient German character and culture.

Needless to say, this is not the German view; and confirmation of the conception of a Germanic type, embodying all the virtues of a superman, is found in the evidence of archæology and racial history. Herr Hitler himself affirms in "Mein Kampf" that the Aryans alone among the peoples of the world have been 'founders of culture', and another prominent official of the Reich, Dr. Frank, is reported to have declared that from the substance of the Germanic race have issued the highest achievements of man, so that it might be considered the duty of the entire human race to safeguard this basic element. This may come as a surprise to those who are not familiar with certain lines of argument in the racial question. It is a view which derives from the middle of the last century and the theories of the Comte de Gobineau, in which the Aryans, the white races *par excellence*, were regarded in their mission to mankind at large as only a little lower than the angels.

An official but popularised version of the basis of present-day German political theory will be found in the translation of the circular issued by Dr. Frick, the Minister of the Interior, which appeared in *NATURE* of February 24, 1934, p. 298. The attention attracted by the misuse of the linguistic term 'Aryan', as significant of race, and the adoption of the swastika as the Aryan symbol, have tended to an unfortunate concentration of criticism on an obvious appeal to sentiment. Notwithstanding the views which have been expressed by Sir Arthur Keith, there seems no good reason to condone the resuscitation of the 'Aryan race' abandoned by Max Müller under criticism. It is, however, in the exclusiveness of its use as the equivalent of 'Nordic' that lurks the sin against the scientific spirit, for with it comes a whole train of assumptions and interpretations which at times fail to pass the bounds of purely imaginative speculation.

Briefly, the German doctrine of the Aryan race is that the tall, long-headed, fair-complexioned Nordic peoples of northern Europe are the modern representatives of the original Aryans. To this race is due the high standard of culture found throughout the civilised world. Not only is this true in antiquity, in the civilisations of Mesopotamia, Egypt, the Mediterranean and so forth, but

even the contribution to culture of Romance countries in modern times is to be attributed to descendants of the Nordic race. They were endowed with certain bodily characters, which represent the highest evolution of the human form; and in addition they possessed, as a racial inheritance, certain outstanding mental qualities. It was in virtue of these physical and mental characters that they became the ruling classes in most ancient and modern societies. Wherever the Nordic strain is mixed with other breeds, it is said, it deteriorates. The aim of the State, therefore, must be to preserve the purity, integrity and dominance of the Aryan race, biologically, socially and politically.

It would be beyond the present purpose to enter into a detailed examination of these interpretations of ethnological, archæological and historical fact, or to weigh the probabilities that the earliest Aryan-speaking peoples were Proto-Nordics, who carried their tongue to the other races of Europe. That the Nordics were a far wandering people who irrupted into many lands is unquestioned; but as nomads their early culture was crude, and the people they conquered must almost invariably have been of a higher culture than themselves. But whatever their cultural status, a strict anthropometric measure applied to the modern population of Germany would find true Nordics in all their racial purity in an embarrassingly small minority.

That Germany has adopted a highly coloured interpretation of history, which in the greater part of its detail would not stand the test of a moment's impartial examination, is a matter of lesser import beside the fact that, by the forcible imposition of certain views on race and racial history, assumption has been taken as proof; and research and its results, unless 'orthodox', have been banned on a number of questions such as racial heredity, racial admixture, the relation of race, mentality and culture, and the like, upon which science would hesitate to pronounce finally in the light of the evidence available. Such dogmatic assumptions, unfortunately, have their attraction for the political doctrinaire and the agitator; and it is perhaps to be regretted, therefore, that the International Congress of Anthropological and Ethnological Sciences did not see its way to promote investigation into such racial problems on broad lines. The machinery may seem overweighty; but at least the truth would have been made available in authoritative form to all.

Finite Differences

The Calculus of Finite Differences. By Prof. L. M. Milne-Thomson. Pp. xxiii+558. (London: Macmillan and Co., Ltd., 1933.) 30s. net.

THE last edition of Boole's "Finite Differences" appeared in 1880, and was in fact a reprint of the edition of 1872. The interval of sixty years has seen in the elementary field Sheppard's introduction of central differences, Thiele's strange invention of reciprocal differences, Everett's discovery of the interpolation formula that bears his name, and the recent development of methods of numerical interpolation which dispense with formulæ altogether; Poincaré's attention to the asymptotic behaviour of solutions suggested new and tractable problems regarding insoluble equations; as a branch of analysis the calculus of finite differences has been revolutionised by Norlund in the course of the last twelve years; Birkhoff, to add one name which is absent from the book under review, has handled the system of linear difference equations by matrix methods which would have won Boole's heart. The publication of an English treatise on finite differences is therefore something of an event to the student of mathematics in Great Britain.

Not that Prof. Milne-Thomson is everywhere on ground that English authors have left untouched since the days of Boole. He follows precedent in dealing in his early chapters not only with the formal algebra of the elementary operators but also with its application to the problems of numerical interpolation, differentiation and integration. These problems come within the domain which Whittaker happily names the calculus of observation, and the only part of Prof. Milne-Thomson's discussion of them which is not in essence familiar is a clear account of the iterative processes of interpolation that have been devised during the last three or four years; these processes could certainly not be ignored in a treatise on numerical analysis, but since their whole point is that what is required in computation is a process and that the existence of a corresponding general formula is irrelevant, it must be admitted that with their development the problem of interpolation extends beyond the bounds of the calculus of finite differences; that Prof. Milne-Thomson should have felt that an account of interpolation which omitted them would be misleading is all the more significant.

Analytically, the calculus of finite differences