

DI MACCO G.: *Malattia e Disposizione*. Rilegato pag. 1116 e 61 figure. Ed. Minerva Medica, Torino, 1959. L. 10.000.

Alla già ricca produzione scientifica di G. Di Macco, tra cui basti citare il « Trattato di Patologia Generale » e « Malattie del Metabolismo », si è aggiunto, ultimo in ordine di tempo, il volume « Malattia e Disposizione », opera che raccoglie il frutto di estese ricerche sperimentali, in parte personali, in parte in collaborazione con numerosi Allievi.

Nel continuo evolversi del pensiero scientifico attraverso il corso dei secoli è sempre più venuto affermandosi il concetto che la genesi ed il corso di ogni evento patologico non dipendono esclusivamente dalla natura e dalla gravità della noxa, ma soprattutto dal terreno in cui si avvera il processo morboso, vale a dire dalle capacità reattive dell'organismo, inteso in senso unitario, come somma sia dei caratteri ereditari che costituiscono il genotipo, sia di quelli acquisiti che ai primi si sovrappongono.

È appunto partendo da tali premesse che l'A. ha raccolto in quest'opera i risultati di numerosissime osservazioni e contributi personali e della Scuola, nei riguardi dei fattori della variabilità individuale, cioè della disposizione, in rapporto ai vari agenti morbigeni. È questo il comune orientamento che collega i vari capitoli del libro, anche se redatti in tempi diversi, e ne giustifica la trattazione, ispirata a criteri di sintesi.

Dopo un capitolo dedicato all'omostasi, intesa come omostasi morfologica e funzionale, e quindi metabolica, l'A. tratta del concetto di malattia, come fenomeno biologico e sociale, inquadrato nel campo della Medicina assistenziale, assicurativa e previdenziale. Passa quindi a considerare la disposizione individuale in rapporto ai meccanismi neurovegetativi, alla senescenza, al sesso, agli stati di intossicazione, ai processi proliferativi iperplastici e neoplastici, alle infezioni, alla somministrazione di sostanze antibiotiche, alle variazioni termiche, all'alimentazione, agli stati di ipervitaminosi e di

iperaminoacidosi. Nell'ultima parte, quale doveroso omaggio alla memoria di chi tanta parte ha avuto nello sviluppo delle moderne conoscenze etiopatogenetiche, vengono tratteggiati i quadri biografici dei più eminenti Patologi italiani. Completa l'opera l'indice analitico compilato con particolare cura.

Ne risulta un trattato dalla vasta mole, della cui consultazione si avvantaggeranno certamente sia il biologo che il patologo, il genetista come il medico pratico, in quanto una più intima conoscenza del terreno predisposizionale nei riguardi dell'insorgenza e dell'evoluzione dei vari quadri morbosi è indispensabile per una piena padronanza di ogni campo della Medicina. In una valutazione complessiva dell'opera di G. Di Macco dobbiamo quindi considerarla come indubbiamente positiva e meritoria, per la vastissima cultura, profondità di pensiero e mentalità squisitamente scientifica dell'A., coltivata e maturata in oltre un trentennio d'insegnamento universitario.

E. GENTILESCHI

J. E. A. CHURCHILL LTD.: *Ciba's Medical Biology and Etruscan Origins*.

Introductory address. R. M. Cook summarizes the various theories held. One that the Etruscans were an immigrant people (from Lydia?). This is supported by the Oriental form in pottery (after the Villanovan period), that the rituals, as evidenced by the tombs, are of Oriental standards and that the language is unlike any Italic form. The origin of the immigrants is in dispute, but is favoured as being Oriental on the basis of the writings of Herodotus and Anticlidides. The language seems to be connected with that of Lemnos. However, the inferior Villanovan art found in the tombs conflicts with the idea of a higher-cultured race, such as the Etruscans are said to be; if they came with an advanced way of life they would not have been so susceptible to Greek influence in the field of mythology and theology.

The *second* theory is that the Etruscans were native, or were established before the 8th century. This is based on pockets of people speaking pre-Indo-European language. In the early Iron Age these people adopted the Villanovan culture which, in turn, became influenced by that of the Greeks and Orientals, contacted through trade.

There is a *third* theory, something of a compromise between the two.

Principal cities of S. Etruria. G. Iotti gives an outline of the geographical aspects of the Italian peninsula, together with details of the sites of old Etruscan cities.

Etruscans and Umbrians. Umberto Ciotti explains the long-basting and varied relations between the two peoples. A study of the links between the two peoples might lead to the disclosure of an unknown, common, primitive ethnic substratum. This chapter deals with this suggested pre-Italic ethnic substratum as supported by the occurrence of common root-names for towns, etc.

Archaeological evidence for the origin of the Etruscans. Hugh Hencken details the two types of colonisation. One was the Greek type. In Greek colonies the Greeks tended to keep themselves apart from the natives, remaining Greek. The pre-historic pattern in Mediterranean lands was quite different. The colonists mixed with the natives. If, in pre-historic times, eastern Mediterranean traits of culture are found widely scattered in the central and western Mediterranean, including Spain, they must have been brought by an eastern Mediterranean people. It has been found that the Etruscans were typical of the Bronze Age population in the eastern Mediterranean (Coon, 1939). The Etruscans are said to be the result of a long and complex development in Etruria, including the formation of the cremating Villanovan culture of the Iron Age. These Iron Age people were the immediate forerunners of the Etruscans. Items of Villanovan culture are scattered throughout Hungary, Italy, North Germany and Yugoslavia; such things as bell-helmets, razors and urns

have been found. The form of decoration on pottery is another example of this culture. The Villanovans were an urnfield people of central European origin with an especially strong S. E. European element but, like other early Mediterranean colonists, were a mixed group, mingling with the previous populations (see summary on page 40). They used an Indo-European language.

Villanovan to Etruscan Civilisation. R. Bloch discusses the characteristics of the two civilisations, the Etruscan one directly succeeding the Villanovan. The most notable characteristics of the Villanovan civilisation are cremation of the dead and the geometrical decoration of pottery, bronze and iron objects. The Etruscan civilisation succeeded the Villanovan at the beginning of the 7th century in Etruria and at the end of the 6th century in the Po valley. The interval was due to the conquest of the trans-Apenine plain by the Etruscans. However, the heart of the problem lies in Tuscany. Was the succession of the Orientalising period to the late Villanovan an indication of the arrival of a population with a higher civilisation? The sites of Etruscan and Villanovan cities are close together, although the Villanovan have often disappeared the form of pottery slowly modifies, thus the Etruscan civilisation, although new, comes from a preceding culture, where many of its roots can be found. Thus, if Oriental elements arrived on the Thyrrhenian coast of Italy they were numerically few and did not change the essential substratum of the preceding ethnoses. This progressive change is more evident in towns at a distance from the sea. Near Bolsena there is the successive appearance of three progressive cultures. Apenninic, Villanovan and Etruscan. This continuity of successive civilisations shows a continuity of populations.

Oriental characteristics of Etruscan religion. A. Piganiol points out several close affinities between Etruria and the Orient. (1) The supreme god of the Etruscans is the sky and other gods have an astral character. (2) There are various similarities in the names of the

divinities with those of the Hittites and Babylonians. (3) The Etruscan account of the creation of the world is similar to that of the Bible and indicates a common Oriental source. (4) The Etruscan skill in divination by the inspection of the liver, such as is carried out in Babylonia. (5) The monsters in the paintings in the Etruscan tombs seem to have their origin in Mesopotamia. (6) The Etruscan conception of the next life, as evidenced by the tombs leads, by comparison, to Asia Minor. Against this evidence of links with the Orient, there is almost no link with the other religions of Italy. This close link with the religion of Mesopotamia seems to constitute proof of the Oriental origin of the Etruscans.

Scientists contribution to Etruscology. A. Neppi Modona discusses the physical conditions at the time of the Etruscans. A map has been reconstructed. The natural surroundings have been defined by a comparative study of literary sources and these have been analyzed from various points of view, botanical, mineralogical, zoological, etc.

The mines in Etruria were exploited and this led to trade and to the growth of important centres. The building material in the tombs, the sculptures and the objects found in the tombs, give indications of the minerals and soil composition. By the examination of bones, in particular of skulls (although very varied) and from the figures on the tombs, the physical features of the Etruscans can be reconstructed. Certain ethnic conclusions can be drawn: the heads are *not* of the Alpine type. In addition, studies have been made of their food (cereals, leguminous and other vegetables, and fruit), of the pottery and of the paints used, of silver and other minerals used (their skill as goldsmiths is famous and cannot be imitated, even now), and of the animals known and drawn in the tomb paintings.

Future research on the origin of the Etruscans. L. Banti again summarizes the position. There are the two ancient theories (1) the immigration theory, that the Etruscans came from Lydia by sea. (Authority, Herodotus). (2) The

autochthony theory that the Etruscans were native to the country and had always lived in Etruria. (Authority, Dionysius). Modern scholars have added a new immigration theory, that the Etruscans came from the north, across the Alps. There is much disagreement between the scholars on all three theories— (a) if the Etruscans were native they must be identified with the Neolithic or Bronze Age settlers. Their sites were smaller and the settlements did not coincide with those of the Etruscans. Moreover, there is a break in the Etruscan culture at the beginning of the Villanovan culture. (b) If the Etruscans came from the north they should be identified with the so-called Villanovan culture, but these earlier Villanovan settlements are in southern Etruria. (c) If the Etruscans came from the sea they did not come at the beginning of the Orientalising period because there was little Oriental import at the end of the 8th century and in the 7th century. What has been found was also imported into Greece and there is as much Greek as Oriental influence in 7th century Etruria. There is nothing that cannot be explained by trade connections. Furthermore, if the Etruscans arrived at the end of the 8th century, there is no explanation for their dropping their own alphabet together with their superior civilisation (architecture, sculpture, pottery) for the adoption of the simpler life of the Villanovan settler. The character of the Etruscan language cannot be agreed and, for the Etruscan religion, there is only a list of names. At the moment a dead end has been reached and future research must be planned in the biological field.

Group Discussion p. 79. Discussion on the size of Etruscan cities as based on the numbers buried in the tombs. Use of skeletons for blood-grouping. The effect of malaria, causing evacuation or destruction. Liver divining; a 2nd century liver found in Etruria was similar to a Chaldean one, possibly due to Chaldeans travelling through Etruria and the spread of Babylonian methods into the Greek

world: points of similarity—the Etruscan people cannot be assumed to have come from one place, but if they came from the east they must have come at the beginning of the 7th century B. C. The Etruscan civilisation began in the 7th century. Etruscan religion is the same as that of the Chaldeans who were travelling to Italy at the time of Cato.

Historical method and the Etruscan problem. S. B. Ward Perkins states that the assumption that the origins of both the people and the language were the same may, or may not, be correct. The origins of the language, the sources of historical Etruscan culture and the genetical origin are three distinct problems. The question « Who were the Etruscans? », has different meanings for the various sciences and the definitions should be clearly stated. The city states forming the federation of Etruria had a strong individuality of their own and one must be careful to avoid talking of the inhabitants of Etruria in the late prehistoric phase as if they were a people uniformly distributed over the area, or necessarily possessing a uniform culture or racial background. There were « tribal units » which might prove to be of considerable diversity.

Population Movements since the beginning of the Roman Empire. D. A. Bullough explained that the capture of Veii, in 396 B. C., only a few years after the Etruscans had been expelled from Latium provided Rome with its first settlement in southern Etruria. In the succeeding century Rome's authority extended in this part with the settlement of Roman families. As the result of the barbarian invasions from the north, a few Gauls settled in Etruria, but there is little evidence of much settlement. However, Etruria under the Romans may have been a land where vast estates, cultivated by tenant or slave labour, existed side by side with free peasant cultivators. In Plutarch mention is made of the labour of imported barbarian slaves, resulting from a dearth of inhabitants in the country. A number of passages in Livy suggests that in the first half of the second century Spain,

Sardinia and Epirus were the main supplies of slaves. In the second half of that century the demand was increasingly met from the eastern Mediterranean and, in Sicily, slaves of Syrian and Cilician origin were involved. Marius' wars brought a substantial number of barbarians into the slave population of Italy, where they were joined in the first century by Berbers from Africa. It was more economic in Cato's time to replace slaves with new purchases rather than allow them to reproduce and these men of oriental descent became an important element in Italy. The end of Pax Romana resulted in land-hungry Germanic and Asiatic people expanding, or transplanting, themselves into Europe and into Italy, in particular. The Visigoth invasion touched Etruria slightly but, on the other hand the allocation of certain Roman-owned estates after the triumph of the Ostrogoths did affect Etruria. These settlements, however, maintained their own identity and maintained closely-knit communities. Some Gothic names can be identified, but very few, in Etruria. In addition, there are some Lombard finds in Etruria, and these population movements ended with the migration of the Lombards. No invasion or migration seems to have affected post-Etruscan Etruria so much as the partial depopulation of the agricultural areas in the second and first centuries B.C.

Group Discussion p. 110. The population changes explain the details given on the map showing the blood-grouping in the region and these population changes are not paralleled in other parts of Italy.

The Principle of Ethnic substratum. T. Bolelli repeated the fundamental principle of research in this field, namely that when one language is ousted by another the victor language does not escape transformations due to the vanquished one. The latter does not disappear without leaving some vestiges behind it. There is an independence of language from race, but it is evident that when a people changes its language the articulating propensities and habits proper to its former tongue

are introduced into the new language. The various dialects spoken in Tuscany are nearer to Latin than any that are spoken in the other Romance territories and this fidelity to Latin must be attributed to a linguistic substratum. This substratum in Etruscan, the characteristics of which are radically different from Latin and gave rise to no partial blending—this is in accordance with the well-known law that when two languages come together their mutual influence is directly proportional to their similarity. However, aspirated consonants do not appear in Etruscan as they do in Tuscan.

Evaluation of Metrical Data in Bone Comparisons. N. Barricof and D. Brothwell said that one of the difficulties in osteometric measures is that skeletons are affected by environmental factors operating within the lifetime of the individual. Small graded differences depend on the combined influence of many genes. The traditional aim of osteometry is to describe the skeletal form of various populations and then, by considering their resemblances and differences, suggest inter-relationship. There are likely to be a number of ambiguous specimens and, in ancient communities the skulls will include those of a large proportion of slaves. A study of Etruscan skulls with those of other Mediterranean communities, both ancient and modern, was made and it was found that most of the populations differ very little in size from the Etruscan, but they are divergent in shape. The Basques, Pompeians and British of the Iron Age and Greeks are close in both dimensions. There is a great degree of similarity with modern Italian populations and there is little reason to suppose that the Etruscan were a highly differentiated, and perhaps intrusive, local type. Movements of population which did occur might have involved people too similar in physique for the change to be detectable.

Group Discussion, p. 149. Blood-testing from narrow tissue in limb bones; discussion of difficulties.

Genetical Characters for Population Distribution Indices. A. Mourant discusses the qualitative characters which are determined by genet-

ical mechanisms, chiefly blood groups. Blood groups and other simple genetical characters, such as thalassaemia and hereditary haemoglobin, have been shown to be of anthropological value. Genes are of value in population studies as they appear in the final population in the proportions in which they originally contributed to the mixing. Detailed Rh grouping is second in importance. The methods used in anthropological problems is to determine gene frequencies in as large samples as possible. However, even if the population resemble one another it is not proof that these populations are closely related. If, however, the frequencies for a considerable number of genetically independent systems are similar in two populations, there is a strong indication that they are related. The thalassaemia gene is prevalent throughout a large part of the Mediterranean area, including much of Italy.

Group Discussion, p. 170. Discussion on skulls, blood-grouping and assessment of phenotype. The anthropological and statistical differences are important in relation to the population studies for historical purposes.

Blood Groups and Haematological data as a source of Ethnic information. R. Ceppellini stated that blood groups form the most important of the genetical systems but thalassaemia has been considered also because of its peculiar geographical distribution. Thalassaemia is widespread throughout the world, but occurs chiefly in the Mediterranean area. The pattern of distribution has given rise to the theory that it was imported into Italy by immigrant Greeks, Phoenicians or Etruscans, but this theory does not help to solve the problem of how such an unfavourable gene could persist in certain populations at such a high frequency. Thalassaemia must be an example of so-called balanced polymorphism where the loss of genes is compensated: that is, because of some special environmental conditions thalassaemic individuals have some kind of advantage over normal ones (for example, early reproductive age or higher reproduction). Thalassaemia has a high incidence only in malarial regions, (as is the

case with sickle-cell anaemia). From various studies it may be concluded that the difference in the frequency of thalassaemia is not due to ethnic heterogeneity, but to a special environmental factor. There is a widely held belief that blood groups are free from environmental influence, but, in reality, it should be said that they are relatively free; in other words, if they are influenced, this can take place over a number of years, whereas traits with a high adaptive value, e.g., thalassaemia, are much more rapidly influenced by environment.

Discussion. p. 184. The influence of environment on genes and the period necessary for this to be felt.

Distribution of Blood Groups in Italy. G. Morganti has attempted to effect a synthesis of the data existing on published literature about this subject. The data available were not obtained for the purpose of archaeological research but for other reasons, such as blood donors, military recruits and pregnant women. So far as Italy is concerned, there is not enough reliable data to allow us to draw either a positive or a negative conclusion about the existence of differences in blood group distribution which could be related to the ethnic influence of the Etruscans. A suggestion was made that a proposal should be submitted for a systematic study of the populations of Etruria and the adjacent zone. Likewise, a study of ancient populations could be made in parallel with the research on living populations.

Discussion. p. 200. The language distribution and its relation to the blood group distribution. The correlation is accidental owing to the movements of population without any fusion with indigenous people.

Gene Differences, the effect on Physical Measurements. M. Siniscalco et al. It has been agreed that inherited characteristics may be influenced by selection, that is, genes which are responsible for some characters, which may be better adapted than others to a particular environment, tend to increase in their relative frequencies. This adaptiveness limits the efficacy of using inherited characteristics as a

means to trace the racial history of man; the distribution of gene frequency is likely to be altered if the groups migrates, or the ecological background changes. Among physical characteristics, body measurements have been emphasized as important, in particular because of the possibility of extending the investigations to skeletal material. Unfortunately there is evidence that metrical characters, (as well as skin and hair colour) are adaptive to climate. Environmental factors, such as sanitation, infectious diseases and food, may play as factors in controlling the growth of skeletal parts of the body and as selective forces. The provision of a new set of inherited characteristics (blood group, plasma proteins, etc.) has not helped in the differentiation of any two populations. It is clear that neither classical anthropometry nor population genetics of simple Mendelian characters could solve the problem of unravelling the course of human evolution, although it is hoped that data concerning both these measures will increase. The distribution of a certain number of physical measurements in a sample of thalassaemic families was investigated. The gene for thalassaemia appears to be most frequent around the Mediterranean and the highest frequencies have been reported in Greece, Cyprus and Italy, although the distribution in Italy is quite uneven. Haldane's theory that resistance to malaria is corrected with a high frequency of thalassaemia should mean that this frequency will drop in the course of a few generations in the areas where malaria has been completely eradicated. A trend of this sort is already noticeable in the district of Ferrara. With regard to a common racial origin hypothesis, it seems more evident that this mutation is likely to be present in all racial groups and the differences in gene frequencies might be explained in terms of adaptation. The «migration» theory is not an indispensable one. It has been emphasized that the region with the highest frequency is known to have been an area of flourishing Greek colonisation. The topography of the Po delta prevented the population of this region from interming-

ling with the waves of northern populations. Thus, an investigation based on the classical tools of anthropometry might be of some value in tracing the history of this population. A study was made of 388 families collected from a village in the district of Ferrara. Various anthropometric measurements were made. The differences in the results with sex and age might be due to the interference of some physiological factor; on the other hand it is conceivable that the populations investigated might not be an entirely homogeneous mixture. In one part there might be a tendency to have a high incidence of thalassaemia, greater stature and lower weight and in the other part these conditions could be reversed. Such a state of affairs would give an association of these characteristics which would be statistical in origin, not genetical or physiological.

Summary: Thalassaemia has some effect on the pattern of body measurements, mainly weight and stature, but more extensive study is required. In the population concerned there is little hope of getting any definite answer regarding its ethnic derivation by studying the distribution of the classical anthropometrical characters because they are affected by thalassaemia. It is likely, therefore, that the often reported findings that thalassaemic populations show peculiar facial characteristics is not to be interpreted as a sign of racial intermixture. This study is an example of how Mendelian genetics and classical anthropometry might give a more definite answer.

Distribution of Serum Haptoglobin types in some Italian Populations. H. Harris, et al. The application of physico-chemical techniques recently developed, such as Smithies' discovery of the inherited difference in the formation of certain plasma proteins, might now enable them to be used in the study of populations. Smithies found that three qualitatively different types of protein pattern could be recognised when plasma was examined. The differences are due to the behaviour of a group of proteins which have been called haptoglobins. The relative frequencies of haptoglobin were discovered in

diverse localities in Italy and these frequencies were found to be not appreciably different from one another, or from European populations. When a more complete pattern of their frequency distribution has been built up the results will be of considerable importance and they will be of some interest when considered from the viewpoint of the anthropologist.

General Discussion p. 236. The positive conclusion which emerges is that both archaeologist and geneticist have material to furnish to the other side which may eventually be useful. This Symposium has been extremely useful in showing something of the methods and objectives of the various specialized studies and the limitations of each. However, it is premature to look for historical results.

It was suggested that the information gathered together should be used and communicated to the authorities in view of the planning of future programmes. Furthermore, it was pointed out that it would be logical to obtain material from the alleged original home of the Etruscans, Asia Minor, for use for comparative purposes with the data about the Etruscans obtained in Italy. The Appendices show some broad outlines for any kind of archaeological work carried out anywhere and a memorandum on the osteometric requirements relating to the study of skeletal remains.

Mr. Cook summarized the value of the exchange of information in the various fields of study and added that the test of the meeting will come in the next 2-3 years as material is produced and conclusions drawn from it.

E. POND

JULIUS BAUER, *Der kranke Mensch als biologische Einheit*, 134 Seiten, 5 Abbildungen, 8°, kartoniert DM 16.80 1958 Georg Thieme Verlag Stuttgart.

L'aspirazione più elevata di ogni medico è quella di poter considerare il malato non come un essere costituito da organi, sistemi e apparati da affrontare singolarmente di fronte ad un avvenimento patologico, ma come una unità