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A SKETCH OF THE ANTHROPOLOGY OF ITALY.¹

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I.—ANTHROPOLOGICAL DATA OF MODERN ITALIAN POPULATIONS.

PROFESSOR GIUSTINIANO NICOLUCCI, who held the Chair of Anthropology in the University of Naples with so much brilliancy, was the first to undertake a complete study of Italian Anthropology,² which appeared thirty years ago. It is a weighty work, which is still useful to consult, because, as the author was extraordinarily erudite, we find used there all the preceding literature on the subject. Two parts are more amply discussed: the prehistoric part, which includes the Ligures, the Umbrians, the Oscians, the Pelasgi, the Japiges-Messapi, the Euganeans, with the Veneti, the Etruscans, the people of so-called Greater Greece, the Phœnicians and the Gauls or Celts: and the part which deals with barbarian invasions and foreign colonies in Italy. The least developed part is that on present-day anthropology, entitled "The Modern Italians": it suffices to say that the Ligures, who had given so much material for prehistoric enquiries to the author, do not even appear in the tables of the various regions of Italy. In any case little or nothing which is satisfactory to modern scientific needs can be got from the tables compiled by Nicolucci; the author does not specify which series he studied or used, and results which have been obtained since do not at all confirm the figures he gives.

Eleven years after the appearance of Nicolucci's treatise another scholar, a specialist in glottology, Professor F. L. Pullè, published his "Profilo antropologico dell' Italia,"³ in which the most important place is given to linguistic facts and the smallest to somatic data: for these last are used those already obtained by Livi, who elaborated the anthropometric material gathered at the levies for the army,⁴ but not taken by him in person as has been erroneously believed. Finally, this same

¹ This article is presented by the author for the purpose of expressing his thanks for his election as Hon. Fellow of the Royal Anthropological Institute of Great Britain and Ireland on 11th December, 1917.

² Nicolucci, G., "Antropologia dell' Italia nell' evo antico e nel moderno," *Atti R. Accad. sc. fis. mat.*, vol. ii, serie 2A, Napoli, 1888. This same work published as a reprint bears the date 1887, as it was really presented to the Academy at the meeting of July 10th, 1886.

³ Pullè, F. L., "Profilo antropologico dell' Italia," *Arch. per l' Antrop. e l' Etnol.*, xxviii, 1898, fasc. 1. Before this Pullè had published a long chapter in vol. iv of Marinelli's *La Terra*, called "Le lingue e le genti d' Italia" (pp. 467-508), in which he specially illustrates the prehistoric peoples of Italy, always basing himself on literary and linguistic texts.

⁴ Livi, R., *Antropometria militare*, Parte i, Roma, 1896. Part ii was published in 1905.

Livi wrote in 1907 a brief summary called "Geografia antropologica dell'Italia."¹

* * * * *

Height.—Nicolucci calculated the average height of Italians to be 1636 mm., adding 10 mm. to the average of conscripts measured between 1874–84, *i.e.*, 1626 mm., which is only a little higher than that which Livi² obtained for the 1855–59 classes, *i.e.*, 1624, on a total of 1,350,799 measured. Livi gave previously³ the average height of the incorporated soldiers or recruits of the 1859–63 classes, that is of 299,355 individuals: this average height was 1645 mm. and is mentioned by Deniker.⁴ But it is evident that this height cannot be preferred to the other, which is that of *all* individuals at 20 years of age, and Livi himself, in fact, in his ethnological comparisons, only uses the figures relating to conscripts instead of those higher, which relate to recruits incorporated in the army.

It seems that Deniker thought he might consider as the average height of the whole male population, either the average + 10 mm. obtained from the conscripts, or the genuine average obtained from recruits, believing that the two figures must be the same "à un demi-centimètre près,"⁵ but it is easy to see that the difference is greater than 5 mm. In fact the difference between 1634 mm. (*i.e.*, 1624 + 10 mm.) and 1645 is 11 mm., and this difference is constantly positive, as I have been able to verify in all the sixteen departments of the kingdom.⁶

On the other hand, it is certain that in two years' time the average growth of soldiers is 9.8 mm.,⁷ therefore, if we add 10 mm. to the average height of the conscripts at 20 years of age, we have the height of the whole male population at 22 years of age and the ulterior growth (from $\frac{1}{2}$ to 1 cm.) can be neglected, as such growth is compensated later in the mass of the population by the decrease in height (from $\frac{1}{2}$ to 1 cm.) after 50 years of age. According to this reasoning the *average height* of the whole male population in Italy is 1634 mm., and we may conclude that Nicolucci's figure was fairly exact.⁸

¹ It is part of a volume by Livi, R., "Antropometria nei suoi rapporti con la Medicina sociale," from the *Trattato di Medicina Sociale, Sanità Psichica*, edited by Fr. Vallardi.

² Livi, R., "Sulla Statura degli Italiani," *Arch. per l'Antrop. e l'Etnol.*, 1883, p. 376.

³ *Op. cit.*, Part i, p. 32.

⁴ Deniker, J., *Les races et les peuples de la terre*, Paris, 1900, p. 662. This average is erroneously given to be for 344,371 individuals. The average 164.00 cm., is given by Martin, R., *Lehrbuch der Anthropologie*, Jena, 1914, p. 214, without giving the number of measured, and it is one of the very few data which Martin gives on Italy in his tables.

⁵ Deniker, J., "Les six races composant la population actuelle de l'Europe," *Journ. Anthropol. Inst.*, 1904, pp. 194–195.

⁶ Giuffrida-Ruggeri, V., "Differenza di statura fra coscritti e reclute nelle diverse regioni d'Italia," *Riv. geogr. Ital.*, xii, 1905, fasc. ix.

⁷ Livi, R., *op. cit.*, Part ii.

⁸ In his large memoir ("Les Races de l'Europe. II.—La Taille en Europe," *Ass. franç. pour l'avancement des sciences*, Congrès de Lyon, 1906. Paris, 1908, p. 27), published later, Deniker asserts that the average height of Italians is 1647 mm., from figures given by De' Rossi. He holds

The female height in Italy is, according to the data given by Raseri,¹ on an average 9 cm. lower than the male; there is, in fact, a difference of 8 cm. between males and females in Southern Italy and 10 cm. between males and females in Northern Italy.

Colouring.—Considering two pure types of pigmentation, that with black hair and black or dark eyes and that with fair hair and blue or light-coloured eyes, the first, generally called the “brown,” is found on a general average² of 25·4 per cent., the second of 3 per cent. Other two types, which may be called the mixed brown and the mixed blond, are also found, the first on an average of 50·1 per cent., the second of 9·3 per cent. A rosy colouring of the skin seems to be represented by 38·59 per cent.

Shape of the hair.—Curly hair is only found in 3·3 per cent., wavy in 13·5 per cent., straight in 83·2 per cent.; but this last category is uncertain, as properly to observe it the hair should be fairly long and not as it is worn by men at 20 years of age; it is probable that many classified as straight-haired should really be classed as wavy-haired. Much better data could be obtained from females.

Cephalic index.—The cephalic or cephalometric index taken on 294,271 Italians gives an average of 82·7,³ but really this is an average without significance: only two provinces, those of Pisa and Salerno, give such an index. From this index, taken on the living, it is necessary for technical reasons to subtract—according to Livi—not less than three units to get the cephalic index of the skull. Roughly we can say that a little less than half the Italians are brachycephals.

Nasal index.—This index was measured on 2696 Italian soldiers from all the districts⁴ and gives an average of 68·54. We know also the proportion per cent. of the “naso arricciato,” which Livi believes to represent the concave nose,⁵ but might also include the nose with a wavy bridge (a variety of the aquiline bridge), which has nothing to do with the concave nose, and naturally we cannot be sure that all the doctors who compiled the tables of individual characteristics understood also (pp. 6-7) that for low heights it is necessary to add 20 mm. instead of 10 mm. to the height of the conscripts at 20 years of age; but I do not believe that short men who belong to a short race grow 20 mm. in two years, as may happen to those under-developed of a tall race.

As to the figure 1632 given by De' Rossi for the last levies considered by him, it may represent the tendency to reach the definite height more precociously: there is therefore even less reason to add other 15 mm. as does Deniker to get the height 1647 mm.

¹ Raseri, E., *Materiali per la Etnologia Italiana*. Roma, 1879.

² Livi, R., *op. cit.*, part i, p. 60.

³ Deniker, J. (*op. cit.*, p. 673), gives the same index for 294,160: this figure is not correct; see Livi, R., *op. cit.*, part i, p. 257.

⁴ Mori, A., “Alcuni dati statistici sull' indice nasale degli Italiani,” *Arch. per l'Antrop. e l' Etnol.*, xxvii, 1897, p. 219. This series is not found in Appendix iii of the above-mentioned manual by Deniker, nor in the *op. cit.* of Martin. The latter does not even give the nasal index of the Italian skeletal series, only making an exception (on p. 835) for the Pompeians measured by E. Schmidt.

⁵ Livi, R., *op. cit.*, Part i, pp. 105-106.

well Livi's idea. To confirm such a doubt, there is the fact that for single districts, Mori's data prove a very different bearing of the nasal index from that which one should have on a basis of the so-called "naso arricciato"; contrary to what Livi would conclude, it has not yet been demonstrated that Northern Italy is more leptorrhine than Southern Italy. It seems that the brown dolichocephal of the peninsula is more leptorrhine than the brachycephal, but certainly other inquiries are necessary.¹

Cranial capacity.—The general average of the capacity of 212 Italian skulls measured with shot by Mantegazza is 1390 c.c., or 1484 c.c. for the men and 1316 c.c. for the women,² the absolute difference between the two sexes being 158 c.c. If the male capacity be considered as 100, the female would be 89·2: almost the same proportion is obtained by uniting many series measured by divers anthropologists in all the districts of Italy.³

Weight of the brain.—The average given by Calori for the weight of male Italians' brains is 1308 gr., but it is an average which is awaiting confirmation, as, according to Topinard, it does not give all the required guarantees,⁴ as it deals with weights obtained by different observers and for other reasons. Leaving aside individuals below 20 and over 60 years of age, male brachycephals give 1314 gr. and dolichomesaticephals 1287 gr.; on the contrary, for females the dolicho-mesaticephals give 1183 gr. and the brachycephals 1162 gr. These are statistical contingencies which have no definite significance, in fact they rather demonstrate that the difference in weight between the narrow and the broad is negligible, contrary to the opinion of Calori and Martin, who also take no account of the difference in stature. If one accepts an average brain-weight of 1308 gr. and an average cranial capacity of 1474 c.c., the relation between the two is 88·7/100.

The figure 88·7 is very close to the coefficient 87 found by Manouvrier in the French series and can be used to obtain the probable brain weights of the various districts of Italy. Leaving aside other data concerning the totality of Italians, we will pass on to the single districts.

* * * * *

Piedmont.—The Piedmontese, says Nicolucci, is of a medium stature, arms and legs strong and muscular. His colour is more brown than white, hair often chestnut, rarely fair; eyes generally grey-green, large and open, the forehead high, straight

¹ This is demonstrated for the female sex: cf. Montessori, M., "Caratteri fisici delle giovani donne del Lazio." *Atti. Soc. Rom. Antrop.*, xii, 1906, fasc. 1, p. 94. A greater skeletal platyrrhiny seems to be found in the islands.

² Figures given by Amadei, G., "La capacità del cranio negli alienati," *Arch. per l'Antrop. e l'Etnol.*, 1882, p. 187.

³ Giuffrida-Ruggeri, V., "La capacità del cranio nelle diverse popolazioni italiane antiche e moderne," *Atti Soc. Rom. Antrop.*, x, 1904, p. 262.

⁴ Topinard, P., *Eléments d'anthropologie générale*, Paris, 1885, p. 570. Calori, L., "Del cervello nei due tipi brachicefalo e dolicocefalo italiani," *Mem. dell'Accad. delle Sc. di Bologna*, Serie ii, Tom. x, 1870. See also Nicolucci, G., *Il peso del cervello dell'uomo*, Napoli, 1881.

and wide, the nose somewhat fleshy, lips generally narrow and the face nearer to the square than to the round or oval.

The average height of Piedmontese conscripts of the 1855–59 classes is 1627 mm., by adding 10 mm. to which we obtain the average height of the whole adult male Piedmontese population = 1637 mm. The height of soldiers (“enrolled” as distinct from “conscripts,” who are all the males of 20 years of age) is 1649 mm.; we find it referred to by Deniker, *i.e.*, 22 mm. higher than that of the conscripts, and for the above-mentioned reasons it cannot be adopted.

For the pigmentation, using Table No. 15 of Livi’s work, already mentioned, we have this percentage: for the pure blond type 4·8, for the mixed 13·0, for the pure brown 17·4, for the mixed 41·5.

The average cephalic index we take from Table No. 24 of the same work, which gives for Piedmont 85·9, the highest cephalic index of all the provinces.

The nasal index of 310 Piedmontese measured by Mori gives an average of 67·29.

On 100 Piedmontese skulls the maximum of frequency of the nasal index was found at 48, according to a table published by Professor Sergi.¹ In another table, published by the same anthropologist, are listed 60 nasal indices of Piedmontese skulls, without indication of sex, from which I have obtained an average nasal index of 46·95.

For the cranial capacity we can take the male to be 1500 c.c.² and the female 1375, with a difference between the two sexes of 125 c.c. Thus, multiplying these figures by the coefficient 88·7, we obtain the average brain-weights of 1330 gr. for the males, and 1219·6 gr. for the females.

Liguria.—The Ligurian is markedly different from the Piedmontese: as noted by Livi, the head is more dolichocephalic, the hair and eyes much more brown, the height generally greater.

The average height of Ligurian conscripts of the above-mentioned classes was 1636 mm., which, with the addition of 10 mm., gives the general average height of male Ligurians as 1646 mm.

For the pigmentation we have these percentages: for the pure blond type 3·5, for the mixed 10·5, for the pure brown 21·1, for the mixed 47·6.

The average cephalic index is 82·3.

The average nasal index of forty Ligurians measured by Mori was 65·37, the minimum for all Italians.

¹ Sergi, G., “Liguri e Celti nella valle del Po,” *Arch. per l’Antrop. e l’Etnol.*, xiii, 1883, fasc. 2°, tab. xi, p. 172.

² See Sergi, G., “Liguri,” etc., *loc. cit.*, tab. viii; Giuffrida-Ruggeri, V., “La capacità,” etc., *loc. cit.*, p. 258. As the single capacities are missing in Sergi’s tables it is impossible to give the precise average: if we refer to the group of greater frequency the male capacity must be considered lower than 1500 c.c., perhaps 1450 c.c. Lombroso in 28 normal Piedmontese crania obtained an average of 1429·9.

Passing from the living to the skeletal material, some results have already been published by me,¹ others I have taken from my tables: in 56 male Ligurian skulls (of which 38 were Genovese) I obtained an average cephalic index of 79·34; in 68 female Ligurian skulls (of which 38 were Genovese) the same index is 79·89.

The same series slightly diminished (55 men and 63 women) gave me the nasal index of 45·44 for the male skulls and 47·26 for the female, thus the total average is a little lower than the Piedmontese total average.

Lombardy.—The Lombard is most like the Piedmontese, only he is a little taller, more blond and with a longer skull than the Piedmontese. The average height of Lombard conscripts was 1632 mm., therefore for the whole adult male population 1642 mm.

For the pigmentation the percentages are: for the pure blond type 4·3, for the mixed 11·7, for the pure brown type 20·1, for the mixed 44·5.

The average cephalic index is 84·4.

The nasal index of 169 Lombards measured by Mori gave an average of 67·31.

The cranial capacity of 55 men of Pavia was 1393 c.c., taken with millet.²

In the province of Brescia 326 brains with the meninges were weighed by Tenchini³ (as Broca had already done), 159 male and 167 female; the average male weight was 1320 gr. and the female 1194 gr., the sexual difference being thus 126 gr.

Venetia.—Nicolucci says the Venetians' height is greater than that of other Italians, the colour of their skin is between white and brown, hair almost always chestnut, often also quite blond; the iris is generally of a dark colour but not infrequently more or less blue, nose short and fleshy; the face wide and round, with the cheek-bones somewhat extended to the sides and the jaw wide towards the corners, so that we find this part in the same vertical line with the zygomas.

The average height of Venetian conscripts is 1653 mm., so that we get 1663 mm. for the whole adult male population, which is slightly less than 1679 mm., the average obtained by Viola⁴ on 350 Venetians.

¹ Giuffrida-Ruggeri, V., "Crani Siciliani e crani Liguri," *Atti Soc. Rom. Antrop.*, xiii, 1907, fasc. i.

² The individual figures are to be found in a publication by Zoja, G., *Il Gabinetto di Anatomia normale della R. Università di Pavia*, Osteologia, Pavia, 1874. The cephalic indices of these same skulls are probably lower than the real index, as the transverse diameter was taken by Zoja "from the most prominent part of one parietal protuberance to the other," instead of the maximum width of the brain case. The nasal index is missing.

³ Tenchini, L., *Sul peso dell' encefalo, degli emisferi cerebrali e del cervelletto nei Lombardi della provincia Bresciana*. Parma, 1884, pp. 4-5.

⁴ Viola, G., "Le dimensioni dell' uomo medio normale veneto," in the work by De Giovanni, A., *Studi di morfologia clinica*. Vol. ii., Padova, 1905.

For the pigmentation we have these percentages : for the pure blond type 5·4, for the mixed 14·2—these are the highest figures of those obtained from all the Italian regions ; for the pure brown type 18·6, for the mixed 41·8—on the other hand, these figures are not the lowest, as they are somewhat higher than those obtained in Piedmont.¹

The average cephalic index is 85·0.

The average nasal index of 67 Venetians measured by Mori was 66·73.

In the *Trentino* the data from the levies which we have, gathered and used by other methods, are not always comparable with those used by Livi ; the fact remains that the proportion of tall individuals is somewhat inferior to that which we find in Venetia and very inferior to that in the Tyrol ; the opposite proportion is found for the low statures.¹ In the many cranial series studied by various anthropologists the dolichocephals do not reach 1 per cent. and the same is found on the living ;² the proportion of brachycephals and hyperbrachycephals is about 80 per cent.

The leptorrhines and the mesorrhines are in almost equal proportions along with a considerable proportion of platyrrhines, *i.e.*, 26 per cent. in 110 skulls from the Fassa valley. For the pigmentation the data only concern school children.³

Emilia, Marche, Umbria.—In the inhabitants of these three districts Nicolucci recognises the “Umbrian type.”

The average height of Emilian conscripts was 1639 mm., therefore for all adult male Emilians we have 1649 mm. ; proceeding in the same way, we have for Umbrians 1636 mm., and for Marchigians 1633 mm.

The pigmentation in the three districts is very closely related, especially in the mixed brown type, for which the percentages are : in Emilia 50·2, in the Marche 49·0, in Umbria 48·7 ; correlatively blonds are more frequent in Umbria, 3·8, than in the Marche, 2·7, or in Emilia, 2·3.

The greatest difference is in the cephalic index, which is, on an average, 85·2 in Emilia, while it is 84·1 in Umbria and 84·0 in the Marche. But in Emilia itself there are notable differences, as Romagna, which makes part of it, is much more brachycephalic than all the rest of the Po valley, whilst the mountain population of the Emilian Apennines is only slightly brachycephalic.

The highest average nasal index for the whole kingdom is that obtained on 90 Umbrians, *viz.*, 70·37, while 208 Emilians gave an average of 68·68, and 112 Marchigians 67·26.

¹ Moschen, L., “La statura dei Trentini,” *Atti Soc. Rom. Antrop.*, Vol. i, 1893, p. 84.

² Moschen, L., “Note di craniologia Trentina,” *Atti Soc. Rom. Antrop.*, v, 1897, p. 11. A plan of cephalic indexes compiled for 12,000 Tyrolo-Trentino skulls can be found in Ripley, W. Z., *The Races of Europe*. London, 1900, p. 291.

³ Moschen, L., “I caratteri fisici e le origini dei Trentini,” *Arch. per l'Antrop. e l'Etnol.*, xxii, 1892, p. 106 *et seq.*

For Emilia we have some examples of anthropological observations confined to one town, Bologna. It is surprising to find that while Livi gives a height of 1642 mm. for Bolognese at 20 years of age, Riccardi¹ gives higher averages beginning at 17 years of age, and as the definite height (from 26–35 years) he gives 1696 mm., which is nearly equal to the average found by Peli² for adult Bolognese, *i.e.*, 1697 mm.

For the female sex Riccardi gives 1553 mm., which is a sexual difference of 14 cm., and Peli gives 1549 mm., almost reaching the sexual difference of 15 cm.

In the cranial capacity also, measured with shot, the sexual difference in the Bolognese appears very high, *i.e.*, 183 c.c., according to what I have gathered from Moschen's tables,³ 189 c.c. in another series studied by Zanolli,⁴ making the male capacity 100; the female is only 87, below the average of such a comparison in Italy. This is in correlation with the great sexual differences in height.

Zanolli has also compared his series of Bolognese skulls with a series of skulls from Todi (Umbria), of 47 male and 63 female. In this series the average male capacity being 1498 c.c. and the female 1356 c.c., the difference is reduced to 142 c.c.; the average cephalic index oscillates around 82 for the Bolognese as well as for those from Todi, and the nasal index around 47.⁵ On the other hand, from eighty-five Umbrian skulls from Ferentillo, measured with shot by Professor Sergi, I get 1490 c.c. for the male sex and 1308 c.c. for the female: sexual difference 182 c.c. The brain weight is also notably different in the two sexes in Emilia: Pini⁶ gives for 30 male Bolognese 1330 gr. and for 30 female 1175 gr.

Tuscany.—In Tuscany, says Nicolucci, we still see physiognomies which recall the ancient Etruscans: the Tuscans are generally of medium height, but tall men are not infrequent; the colour of their skin is brown, and their hair generally dark; black eyes, rarely blue, large and wide open, an oval face, slightly wide at the line of the cheek-bones; a high, straight, clean-cut nose, delicate lips, somewhat pointed chin, a sweet and expressive countenance, especially in the women, who are generally pretty and pleasing.

The height of Tuscans—adding the usual 10 mm. to that of conscripts—gives an average of 1649 mm.

¹ Riccardi, P., "Statura e condizione sociale studiate nei Bolognesi contemporanei," *Arch. per l'Antrop. e l'Etnol.*, xv., 1885, p. 104.

² Peli, G., "Sulle misure del corpo nei Bolognesi, ricerche antropometriche," *Mem. dell'Accad. delle Scienze di Bologna*, 1881, S. iv, T. ii.

³ Moschen, L., "Nuova contribuzione allo studio della craniologia dei Bolognesi," *Atti. Soc. Rom. Antrop.*, viii, 1901, pp. 18–20.

⁴ Zanolli, V., "Studi di antropologia bolognese, Part i, Crani e mandibole," *Atti Accad. scient. Ven.—Trent.—Istrianica*, Classe I, Anno V, Padova, 1908.

⁵ For the exact figures see Zanolli, V., "Saggio di craniologia tuderte," *Atti Accad. scient. Ven.—Trent.—Istrianica*, Padova, 1912, p. 10 of the reprint.

⁶ Pini, G., "Sopra il rapporto fra il volume ed il peso specifico dell'encefalo umano," *Atti Soc. Rom. Antrop.*, Vol. vii, 1900, p. 111. Here are cited the preceding results of other authors: Franceschi, who was able to weigh 400 Bolognese brains, obtained somewhat higher figures, whilst Gaddi obtained much lower figures for Modena.

For the pigmentation we have these percentages : for the pure blond type 3·3, for the mixed 9·8, for the pure brown type 22·0, for the mixed 47·7.

The average cephalic index is 82·3.

The average nasal index of 760 Tuscans, measured by Mori, is 69·09.

In Tuscany it is necessary to distinguish the *Lucchesia* and the *Garfagnana*, as these two regions belong to a population which is among the tallest in the kingdom and tends to dolichocephaly, as already noted by Lombroso.¹ By adding 10 mm. to the height of conscripts from the Garfagnana ("circondario" of Castelnuovo) we get the average height of 1672·5 mm., which is the highest in Italy.² The average cephalic index of this same "circondario" seems to be 78·2. In the female sex of the *Lucchesia* we also find very tall statures : in 114 women the greatest frequency was noted at 1570 mm.³

As to Tuscan skeletal material, the study made by Bianchi⁴ of forty male skulls and fifty female from the town and surrounding country of Siena abounds in detailed observations, but the averages—because of a hostility towards averages, which became fashionable some time ago—are missing and cannot even be exactly deduced. Without the averages the most important means of presenting anthropological phenomena is absent ; these phenomena cannot be summarised in any other way. We can say approximately that the capacity seems very near to that of the Piedmontese. It seems also that prognathism is relatively notable, and is almost invariably alveolar. There has also been noted a great variety of morphological characteristics depending upon the mixture of brachycephals (which are in the majority) and dolicho-mesaticephals.

Latium.—The Roman type has been much debated ; different opinions are held, principally by Nicolucci, who affirms its existence, and by Livi, who is of the opposite opinion. The question, however, has been resolved by an exhaustive study of the female sex. Dr. Maria Montessori, having measured 200 women of Latium, was able to conclude that there are two distinct types :⁵ the dolicho-mesaticephalic (cephalic index 76), brown, short (1·53 m.), more leptorrhine (nasal index 61), which was numerically prevalent and the other which is taller (1·57 m.), brachycephalic (cephalic index 83), blond and less leptorrhine (nasal index 65).

For the male sex the average height of conscripts from Latium being 1623 mm., we get for the whole adult population 1633 mm.

¹ Lombroso, C., "Note di antropometria della Lucchesia e Garfagnana," *Annali di Statistica*, 1878.

² Cf. *Atti Soc. Rom. Antr.*, xii, 1906, p. 340.

³ Pittaluga, R., "Studio antropometrico sulle donne della Lucchesia," *Atti Soc. Rom. Antr.*, xv, 1908, p. 19.

⁴ Bianchi, S., "Craniologia dei Senesi odierni," *Arch. per l'Antr. e l'Etnol.*, xiv, 1884, p. 319.

⁵ Montessori, M., "Caratteri fisici," etc., *loc. cit.*

The percentages of pigmentation are : for the pure blond type 2·0, for the mixed 7·3, for the pure brown type 26·1, for the mixed 52·9.

The average cephalic index is 81·0.

For the nasal index we find, in Mori's tables, only 21 persons from Latium, who give an average index of 69·71. This much higher figure than that which we have in the nasal index of the women measured by Montessori makes us inclined to think that Mori's indices are all higher than they should be for the male sex, but it is not possible to determine by how much : other investigations are necessary.

The cephalic index of 44 male skulls of so-called modern Romans—they are really of very different derivation, from Old and New Latium—studied by Nicolucci¹ gave an average of 78·2 : he got the same average in a small series of female skulls. The average capacity of 41 skulls measured with sand was 1513 c.c.

Abruzzi, Campania, Puglie, Basilicata, Calabrie.—All these districts correspond anthropologically to the southern type of the Italian peninsula, which is thus described by Nicolucci. The height is generally below the medium, the colour of the skin somewhat brown, although white and flesh-coloured skins are not lacking. The hair is almost always black, black the lively, penetrating eyes ; a slim figure without adipose and without a paunch. They have not a very wide forehead, but it is high and flat, the eyebrows thick and arched, the nose high and clean cut, the chin slightly pointed.

In the height we find much resemblance in these five regions. We have—with the usual addition of 10 mm. to those of conscripts—the following averages : Abruzzi (and Molise) 1617, Campania 1620, Puglie 1613, Basilicata 1599 (which is the minimum for the whole kingdom), Calabrie 1604.

For the pigmentation we have a characteristic augmentation from north to south, as we have for the mixed brown type the following percentages : Abruzzi (and Molise) 50·8, Campania 54·7, Puglie 55·2, Basilicata 56·0, Calabrie 62·2.

The average cephalic index presents a general diminution towards the south : Campania 82·1, Abruzzi 81·9, Basilicata 80·8, Puglie 79·8, Calabrie 78·4.

The homogeneity of the meridional type is well seen in the nasal index, in 188 Abruzzese 69·77, in 116 Campanians 69·68, in 185 Pugliese 69·49.

A series of 100 Neapolitan skulls were studied by De Blasio,² 50 male and 50 female. The male averages were : cephalic index 77·3, nasal index 46·56, cranial capacity 1294 c.c. ; difference between the two sexes 107 c.c.

The cranial capacity of the Pugliese was higher : 57 male skulls measured

¹ Nicolucci, G., "Antropologia del Lazio," *Atti R. Accad. Sc. fis. mat. di Napoli*, 1875, Vol. iv.

² De Blasio, A., "L'ossuario dell' Annunziata di Napoli," *Riv. mens. di Psich. for., Antrop. crim. e sc. affini*, 1903, p. 123.

with shot by Moschen¹ gave an average of 1494 c.c. and 31 female skulls 1340·8 ; difference 193 c.c.

Sicily.—Nicolucci does not find the Sicilian type so uniform as it is generally believed to be ; others, on the other hand, find it indistinguishable from the meridional type as a whole. Both judgments may be true, according to the degree of analysis which one has in mind. For example, it is difficult to find a difference between Sicilians and the above-mentioned Southerners in the statistics of the levies.

The height of the whole adult male population—adding 10 mm. to that of conscripts—is 1618 mm.

The average cephalic index of 32,526 Sicilians given by Deniker is 79·0 by a misprint, it being really 79·6.

The nasal index of 382 Sicilians measured by Mori gave an average of 70·0.

Many series of Sicilian skulls have been measured.² The most homogeneous is that of Mondio, made up of modern Messinese, 100 men and 80 women. In this series the average cephalic index for the male sex was 75·81, for the female 75·08. The averages agree with the results I obtained from a more numerous series, that of the Anatomical Institute of the University of Catania (but which came from various parts of the island), the 113 male which I measured being one-half with an index below 75·0 and one-half with an index above, whilst the 90 female skulls gave an index somewhat higher.

For the average nasal index on the skeleton Mondio gives 48·05 for the male sex and 49·78 for the female. As to distribution by categories I have been able to see that the leptorrhines (up to 47·0) make up 40·2 per cent., as in the male so in the female series ; therefore, as the majority is above such an index, an incipient skeletal mesorrhiny is demonstrated for the whole population.

For the cranial capacity Mondio obtained an average of 1398 c.c. in the male sex and 1256 c.c. in the female, a difference between the sexes of 142 c.c.

In the 210 skulls measured by me with shot (120 male and 90 female) I obtained an average of 1330·6 c.c. for the males and 1239·6 c.c. for the females, a difference of only 91 c.c. between the sexes,³ but probably I had struck an exceptional series (in the collections of anatomical institutes there are easily included by preference those abnormal skulls which occur in dissections), as it seems to me that the male capacity is too small. We must also remember that their belonging to the lowest social class influences the result.

¹ In an unpublished work : see Giuffrida-Ruggeri, V., *La capacità del cranio*, etc., where there are other indications (*i.e.* for Venetians, Istrians, etc.) not included in this sketch.

² See principally : Moschen, L., "Quattro decadi di crani moderni della Sicilia," *Atti Soc. Veneto-Trentina di Sc. natur.*, Serie II, Vol. i, fasc. ii, 1903 ; Mondio, G., "Studio sopra 200 teschi messinesi : 180 appartenenti a sani, 20 a delinquenti," *Arch. per l'Antrop. e l'Etnol.*, xxvi, 1897, fasc. 3 ; Giuffrida-Ruggeri, V., "Crani Siciliani e crani Liguri," *loc. cit.*

³ Giuffrida-Ruggeri, V., "Terzo contributo all' antropologia fisica dei Siculi eneolitici " *Atti Soc. Rom. Antrop.*, ix, 1905, fasc. 1, p. 82, in a note.

Sardinia.—In Sardinia also Nicolucci finds very different types according to districts; he agrees with Father Bresciani, from whom he takes the following description:—"The Sardinians have thick and very black hair, some plait it and some allow it to fall on to their shoulders with locks each side on their temples. They have a brown skin, but this is darkest towards the South Cape and gradually acquires lighter shades as we proceed northwards, until we find the vermilion and white cheeks of the Fonnesi and Gallurani. They have black vivacious eyes . . ."¹ He also notes the difference in height between the Sardinians of Cape Calaritano, a very small people, and the tall people of Logodoro, Gallura and Nurra with thick beards.

As the average height of all Sardinians of the male sex we have 1601 mm., the height of conscripts being 10 mm. lower.²

For pigmentation we have these percentages: for the pure blond type 0·5, for the mixed 2·9; for the pure brown type 25·4, for the mixed 70·4; these are the minimum and maximum figures respectively for each type, found in Italy.

The average cephalic index is also the minimum, 77·5: in the province of Cagliari it is 77·2 and 78·1 in the province of Sassari.

For the nasal index, only 35 Sardinians are found in Mori's tables, and these give an average of 68·82, which is a little higher than the index 66·6, obtained from 86 Sardinians measured by Gillebert d'Hercourt.³

Much skeletal material from Sardinia has been gathered in the museums of the island and the Continent. The Sardinian collection in Rome, at the Collegio Romano, has been excellently well studied by Professor Duckworth of Cambridge.⁴ The cephalic index of the male series (70 skulls) gives an average of 71·53, the nasal index 49·0, the cranial capacity, calculated according to Lee's formula, 1426 c.c., a very high capacity, considering the low height of Sardinians. The female series gave, cephalic index (32 skulls) 71·94, nasal index 49·2, cranial capacity 1252 c.c., difference between the two sexes 174 c.c. The females are less orthognathous, having the alveolar index 96·48, while the male is 95·2. On the whole the Sardinians are more dolichocephalic than the Sicilians (a difference of 4 units) and equally mesorrhine, with a much greater sexual difference in the cranial capacity. Given the low stature it seems as though this sexual difference was out of proportion, especially as it is not confirmed in other series. A series, partly unpublished, by

¹ Bresciani, A., *Dei costumi dell' isola di Sardegna comparati agli antichissimi popoli orientali*, Napoli, 1850, Vol. i., p. 41.

² Professor Martin (*op. cit.*, p. 214) gives the stature of Sardinians as 1619*: this asterisk indicates that other 10 mm. must be added to get the correct height, 1629; but all this is completely erroneous, as it would mean an increase in stature amounting to 38 mm.!

³ Gillebert d'Hercourt, "Rapport sur l'anthropologie et l'ethnologie des populations sardes," *Arch. des missions scientifiques et littér.*, 3 série, t. xii, Paris, 1885, p. 42..

⁴ Duckworth, W. L. H., "A study of the Craniology of the Modern Inhabitants of Sardinia," *Zeitschr. f. Morphol. u. Anthropol.*, xiii, 3 (1911), pp. 439-504. In this article are cited other authors on the Sardinians.

Ardu Onnis, gives 1403 c.c. for 114 male skulls and 1298 c.c. for 97 female skulls, a sexual difference of 105 c.c.

Professor Duckworth himself compares the population of Sardinia with that of *Corsica*.¹ From anthropometric data, obtained by Jaubert, we get as the average height of 17,726 Corsican conscripts 1633·4 mm.² as cephalic index of 500 men 76·6. The strongest dolichocephaly is found in the mountainous district of Niolo, and is accompanied by greater height and a blond or light-chestnut complexion, instead of which the people of the mountainous districts of Sardinia, where also we find the greatest dolichocephaly, *i.e.*, Lanusei and Nuoro, are the lowest in height and darkest in colouring.

According to Duckworth, a replacement of the primitive population has occurred in central Corsica, which has remained fairly pure in the mountainous districts of Sardinia. It is this original element which he has tried to isolate in his Sardinian series (11-12 skulls of 70), which present the characteristics of extreme dolichocephaly, a tendency to platyrrhiny and prognathism. The presence of this element—which is not the common Mediterranean element—explains why Sardinia is the most dolichocephalic of the Italian districts and has perhaps the greatest tendency to prognathism and curly hair.³ An ancient Pigmy element of African origin has been thought of by Professor Sergi, but this idea of an ancient Pigmy population in many parts of Europe has been abandoned in recent times: the facts on which it relied were perhaps only favourable to the demonstration of the presence of a Proto-Ethiopic element of low height, an hypothesis according to us more plausible, and which explains equally well the presence of certain equatorial characteristics.

* * * * *

If the so-called Latin Race really existed, the anthropology of Italy, as of a good part of Europe, would be very simple: it would be sufficient to describe the characteristics of this race. But he who tries to put together such a description finds out at once that things are very different, and that there are no physical characteristics which apply to all the representatives of the so-called Latin Race. He finds without fail that the physical characteristics are the most varied, and he has no criterion to select some and leave others aside: in these conditions it is not possible to give any description of this pretended race, and a race which cannot be described in its physical characteristics is purely imaginary, it does not exist in a zoological sense: of this cultivated people are generally persuaded. There exist instead somatic groups, or somatic unities, which we find among all the Latin populations, as we find them in the Anglo-Saxon, Slav, etc., populations. This inquiry

¹ Numerous literary references on the subject of Corsican anthropology are given by Professor W. L. H. Duckworth, *loc. cit.*, p. 480; see also Deniker, J., "La Taille en Europe," *loc. cit.*, pp. 34-36.

² For these an average increase in height of only 10 mm. between the 21st and 26th years has been ascertained (Duckworth, *loc. cit.*, p. 481).

³ Both facts are frequently mentioned by Sergi, G., *La Sardegna*, Torino, 1907, pp. 81-85, Figs. 23-24, 27-28.

constitutes the somatic analysis of a given population, and belongs exclusively to physical anthropology.

The physical anthropology of Italy can be described on broad lines and for this are especially useful the investigations in military anthropometry of Livi, who has co-ordinated them and summed them up with infinite care—or in the more detailed way by restricted and monographic investigations.

On broad lines we can say—and commonly the fact is clear even to the eyes of the vulgar—that there is a very evident somatic difference between the North and the South of Italy. The collections of skulls which have been studied, of these two large regions, have shown that the lower half of the peninsula and the islands have a very homogeneous population. It is certain that the fact of finding practically only certain cranial forms, ellipsoid, ovoid, pentagonoid, along with perfect orthognathism and a lepto-mesorrhine nasal index, gives us the right to think that we are dealing with a single, Mediterranean, race, without wishing to enter into the question whether this has not been originally altered by archaic similar forms, but which belonged to another race, less orthognate and less leptorrhine, and without wishing to exclude the possibility that some element, which can only be diagnosed by its very high stature and by depigmentation, has been incorrectly included among the Mediterraneans. *Vice versa*, the collections from the North show the opposite fact, that is, the prevalence of the different short forms, sphenoid, spheroid, etc., especially platycephalic,¹ the shapes of the so-called Eurasic stock; or, better, perhaps, of the Alpine variety; nevertheless, the homogeneity is less than in the South, as Mediterranean forms are fairly well represented.

We notice almost the same fact if we consider the maps of the cephalic index published by Livi: we see in Southern and Insular Italy the great prevalence of dolicho-mesocephals, in Northern Italy the preponderance of brachycephals, whilst in Central Italy first one and then the other prevail; that is, on the Adriatic slope, more often the brachycephals, on the Tyrrhenian slope the dolicho-mesocephals. In the North also we have not everywhere the same intensity of brachycephaly, but we have lighter spots which correspond to a considerable proportion of dolicho-mesocephals. When one also remembers that a part of the Mediterranean skulls, especially pentagonoid and ovoid shapes, pass into the first degrees of brachycephaly, the mixture in Northern Italy is still greater than that which appears from Livi's maps: in certain Emilian and Lombard provinces the cranial forms, which are really Alpine or Dinaric, make up less than half.² In Southern Italy, also, one has not everywhere the same intensity of dolichocephaly, as there are here and there unequal brachycephalic infiltrations, according to whether invasions have carried new

¹ See, for example, for Venetia: Tedeschi, E. E., "Studi di antropologia Veneta," *Atti Soc. Rom. Antrop.*, Vol. v, p. 49.

² Giuffrida-Ruggeri, V., "La statura in rapporto alle forme craniche. Note di antropologia Emiliana e Lombarda," *Atti Soc. Rom. Antrop.*, Vol. v, fasc. ii.

ethnic waves to one place rather than to another. It seems that these have quite spared the Garfagnana and in part Liguria also, especially the Gulf of Spezia, as the ancient dolicho-mesocephalic, brown, tall population has remained almost intact.

Nicolucci says that in Romagna one not infrequently meets men of a strong, robust figure, who are not incorrectly judged to be of Gothic origin, and also that the descendants of the Longobards have generally a high nose, somewhat thick towards the tip, rather prominent cheek-bones, the shape of the face between round and square; they are tall, of a white skin, with very light chestnut-coloured hair and often blond. He himself cites Maggiorani,¹ who says that the descendants of the Arabs in Sicily are recognisable by their height, brown colouring, slim, slight figure, long profile, deep-sunk eyes, which are black and shining, small mouth, aquiline nose, with only a slight depression at its root.

We have already seen that in colouring and hair the Italian population is by a very great majority brown: in fact not only is the Mediterranean race brown, but also the so-called Celtic race which predominates in the valley of the Po. The greatest quantity of really blond individuals, with blond hair and light eyes, is found in Venetia. In a less degree blonds are found all over Italy, not excluding the islands: in Sicily they are specially found in the province of Palermo, which is said to arise from the greater number of Normans who established themselves there. The Albanians, too, from investigations made in the province of Cosenza,² are found to be less pigmented than the Calabrians; it is sufficient to say that in 59 men fair hair was 27 per cent., light eyes 47 per cent., and white skin 67 per cent.; they are also taller (m. 1·64) and less dolichocephalic (cephalic index 80·6).

If we exclude Venetia and the Garfagnana, height in the rest of Italy is somewhat low, as the Alpine or Celtic race of the valley of the Po, as well as the Mediterranean, are both of low stature, with the difference that the first is more sturdy. In the south of the peninsula, especially in Basilicata, and in the islands, we have a large percentage of very short individuals, as we can see by the number of conscripts refused because of their height: we have the maximum of men refused in Sardinia, about 30 per cent. of the conscripts from the province of Cagliari do not reach the height of m. 1·46. In a very small degree this can be attributed to retarded growth.

It would be important to ascertain if there are differences in the various phases of growth between the different regions of Italy: it seems that the rhythm is not the same for the Romagnols and the Abruzzese.³ In the Abruzzese of Teramo it seems

¹ Maggiorani, C., "Reminiscenze antropologiche della Sicilia," *Atti R. Accad. dei Lincei*, 1871.

² Zampa, R., "Anthropologie Illyrienne," *Revue d'Anthropologie*, 2^e série, T. ix, p. 634. Unfortunately this important memorial is full of printer's errors: cf., by the same author, "Vergleichende anthropologische Ethnographie von Apulien," *Zeits. f. Ethnol.*, 1886.

³ Vitali, V., "Gli Abruzzesi," *Atti Soc. Rom. Antrop.*, vol. viii, 1901, p. 218.

that we have coefficients of growth below the sixteenth year which are superior to the respective coefficients in the Romagnols. The period of greatest growth occurs between the thirteenth and sixteenth year in the case of the Abruzzese and between the twelfth and fifteenth year in the Piedmontese.¹ It seems also that an acceleration of development has taken place generally throughout Italy in recent times.²

From what we have pointed out it is evident that there are many gaps, but they are not greater than those which we find in other European ethnographical regions; in fact, perhaps we may say that Italy is relatively better studied than any other. With the averages which we have given for the different districts, it is easy to construct a map of the geographical distribution throughout Italy of each somatic characteristic studied. A revision of Italian craniological data is at present being made from the point of view of the height of the skull,³ and promises to give important results.

II.—THE ORIGINS OF THE ITALIC PEOPLES.

Leaving aside all that refers to the Palæolithic age, in which Italy was much less favoured than were the other regions of Western Europe, Italian origins find a more solid base in the Neolithic age. From the Lombard plains to the Ionic shore archaeologists have found the circular foundations of a number of huts half buried in the earth, which were inhabited by the families of a pastoral people who were united in real villages. The huts are hollowed in the ground on purpose, perhaps to frustrate the violence of the wind or to hide better the inhabitants from their enemies: as entrances we find either descending steps, or an inclined plane, or a shaft close to the hut. In these hut-foundations are found, not only weapons of polished stone, but all the remains of domestic crafts, amongst which the pottery is the most evolved in technique, form, and decoration.

With the hut-dwellers appear the first burials, the funeral rite is that of inhumation; the body was laid in the so-called "contracted" position, that is, lying on its side with the legs doubled up; it had beside it everything it could need in its life beyond the tomb. In the great Prehistoric and Ethnographical Museum in the Collegio Romano at Rome, such skeletons can be seen still in the earth, where they were found with funeral furniture which differs according to the sex. The caves generally served as cemeteries for the small neighbouring tribes; many have been explored, especially in Liguria, where are the famous Balzi Rossi (in dialect, "Bausse russe") caves, also called the caves of Mentone, which have given so much material

¹ Pagliani, L., *Lo sviluppo umano*, 2^a ediz. Biella, 1913, p. 35.

² De' Rossi, G., "La statura degli Italiani," *Arch. per l'Antrop. e l'Etnol.*, xxxiii, 1903, p. 63.

³ Pelizzola, C., "L' altezza del cranio nel Tirolo," *R. Ist. Lomb. sc. e litt., Rendic.*, XLVIII, 1915, fasc. 12; "Linee generali della distribuzione dell' altezza del cranio nella Penisola Italiana." Parte I, *Atti Soc. Ital. Sc. Nat.*, LVII, Pavia, 1918.

for study to French anthropologists. These caves are on the frontier between Italy and France, and close to the territory of the Prince of Monaco, who gave liberal sums to French archæologists and anthropologists to facilitate their exploration and study. They were inhabited and used as burial places even before the neolithic age, that is, at the end of the palæolithic age, to which belong the skeletons of a negroid type, which were found in them along with others, more recent, of the Cro-Magnon type, a type often found in France in the Magdalenian epoch. They therefore seem to belong in one sense to French Palæethnology and in others to Italian; their implements belong to the end of Aurignacian epoch, but the caves are related to the other neolithic caves of Liguria, examined by Professor Issel and other Italians, where also were found many skeletons which are now in the Geological Museum of Genoa. But characteristic neolithic Italian tombs are those excavated in cliffs, which Professor Pigorini¹ calls the "most ancient monuments of the European continent." These artificial caves, which are entered by an inclined plane, or by a cylindrical shaft, or by steps cut in the rock, are like a narrow oven, and in reality reproduce the type of dwelling of the semi-subterranean huts² mentioned above. The first to demonstrate the great importance of the study of prehistoric civilization was Gaetano Chierici of Reggio-Emilia, and in the Museo Civico of that town are preserved many skeletons of this epoch. After him a phalanx of students have inquired into our prehistoric origins, with results which have been much appreciated, as their studies have illuminated greatly the whole Italian neolithic age.

At the present day it seems that we can affirm that we are not dealing with local progress from the palæolithic age, and perhaps not even with a civilization which slowly introduced itself. Professor Pigorini, who has given his scientific life to this research, holds that although the old inhabitants remained here and there, it is certain that in the midst of them suddenly appeared a people whose usages, customs, arts and crafts are totally without relation to the past. These new inhabitants probably came from the East in canoes, and having crossed the Mediterranean, landed on the southern shores of the peninsula, as well as in Sicily and Sardinia. Among the ornaments abandoned on the floors of the huts and caves they left the shells of *Meleagrina margaritifera* and *Mitra oleacea*, which reveal the Eastern route.

Eric Peet, in his comprehensive volume dedicated to prehistoric Italy,³ writes, "They are no novices in the art of pottery-making,"⁴ and he also adds that they are a pastoral people and can be no other than that later called Ligures (Liguri) by

¹ Pigorini, L., "Le più antiche civiltà dell' Italia," *Bull. Palet. Ital.*, xxix, Nos. 10-12, 1904, p. 197.

² Pigorini, L., "Gli abitanti primitivi dell' Italia," *Atti Soc. Ital. per il prog. d. scienze*, 3^a riunione, Roma, 1910, p. 16.

³ In this highly recommendable work one finds amply expounded many investigations, here omitted, by Brizio, Orsi, Colini, Milani, Pinza and others.

⁴ Peet, T. E., *The Stone and Bronze Ages in Italy and Sicily*. Oxford, 1909, p. 165.

historians. He is uncertain whether the Ligures came by sea or by land, passing through Spain and Southern France. This latter route is certainly the longer, if they came from the East, because it means that they had to cross all Northern Africa to the Straits of Gibraltar, but it is perhaps the route most likely to be followed by a pastoral people.

It seems that the Siculi belonged to the same race as the Ligures, as they were all people of the "Mediterranean type." The descent of the Siculi from the Italian peninsula into Sicily is strenuously upheld by Professor Patroni,¹ as it seems confirmed by divers archæological evidences; given the vicinity of the island to the mainland, it is very probable that this happened various times and came to the notice of historians, if even in Thucydides' times there were Siculi in Calabria. In many parts of the peninsula tradition mentions the Siculi, which would be difficult to account for as purely a fable. But the most ancient neolithic population, that which takes its name from Stentinello, a locality near Syracuse, must have come straight from the Eastern Mediterranean, probably from Crete, if Peet was able to assert that whoever examines the neolithic pottery to be found in the museums of Syracuse and Candia, sees at once that the Stentinello ware belongs to the same archæological context as that which came from beneath the floors of the palace at Knossos and elsewhere in Crete.² At a later epoch, at the end of the neolithic age, in the cave of Villafrati, near Palermo, are also found the human representatives of an Oriental type (markedly brachycephalic skulls), together with the characteristic cup shaped like an inverted bell, whose prototype is found in the East.³ The legend of the Sicani-Iberi is now put aside, although in the western part of the island similarities to Iberian civilization of the same period are not lacking, but this is due to "that great wave of influence which touched the coast districts of Western Europe, bringing with it the dolmen and dolmen-pottery,"⁴ as the dolmen also appeared in the neolithic age and seem to be distributed according to certain lines of navigation and overland commerce.⁵ On the other hand it is certain that the brachycephalic skulls could not come from Spain, but rather from the high regions of Asia Minor.

Professor Patroni affirms that in the most ancient Sardinian tombs of oven-form, called "domus de janas" or "witches' houses" (*case delle streghe*), one finds numerous close resemblances to the dolmen civilization. Moreover, in Sardinia,

¹ Patroni, G., "La civilisation primitive dans la Sicile Orientale," *L'Anthropologie*, 1897, pp. 129 and 294.

² Peet, T. E., *op. cit.*, p. 135.

³ The question of the anthropo-archæological concomitance has been lately dealt with in my article, "Antropologia e archeologia in taluni riguardi della preistoria europea," *Arch. per l'Antrop. e l'Etnol.*, xlv, 1916, fasc. 1-2.

⁴ Peet, T. E., *op. cit.*, p. 482.

⁵ Cf. Peake, H., "The Origin of the Dolmen," *Man*, xvi, 1916, No. 8, p. 116. The author, however, places the origin of the dolmen at a too recent epoch—that of metals!—whereas they begin in the neolithic.

the whole evolution of the dolmen is found: from the small dolmen which is only slightly raised above the level of the ground to the highest, from that constructed of a very few slabs of stone to that made of many stones, gradually lengthening until we find those corridors of tombs called by their local name of "Tombe di giganti." Parallel to that of the dolmen, we have the evolution of the "domus de janas," which, about 2000–1500 B.C., reached their highest development, as seen in the little caves of Anghelu Ruju near Alghero, explored by Antonio Taramelli. These necropoleis belong to what is called the "eneolithic" age, that is to an age in which copper was used as well as stone; in other words, we are at the beginning of the employment of metals. In these caves are buried the representatives of another migration, which came from the East, and this time the proofs are not simple shells but the pottery, which is found to be the same as that of Crete, the symbols expressed in relief on the walls and pillars of the tomb, the marble figurines of an asexual and also of a feminine type like those so well known in the *Ægean*, the betylic cult and the statue itself of a bull-god. The skeletons themselves, found in the necropolis of Anghelu Ruju, indicate their derivation, as, of 63 skulls studied by Professor Sergi,¹ 10 (that is 15·87 per cent.) were found to be brachycephalic and to belong to the so-called "Eurasians."

Another favourable indication of the Eastern source of this eneolithic people, who were known to the Egyptians of the XIXth Dynasty as "Shardana," is found in the megalithic architecture, known as Cyclopic constructions, introduced by them especially in the construction of the "nuraghi." These massive buildings, true fortresses of the epoch, had an evolution lasting many centuries, becoming continually more complicated and sumptuous in the metal age; in the beginning they were only stone huts resembling the conic brick huts which we find pictured in the Assyro-Babylonian bas-reliefs. Professor Patroni² has lately illustrated this analogy and indicated, in prehistoric Greece, at Orcomeno, the existence of huts with a base of stone and domed roofs of raw bricks. In the Eastern Mediterranean these raw bricks rapidly gave place to stone, which is explained by the abundant use already made of this material in the building of the dolmen, as well as by the fact that stone buildings made a much more valid and permanent defence, and therefore were better adapted to their needs.

There must have arisen an epoch of great power for Sardinia at this time, power which was never afterwards regained. Bronze was manufactured here on a large scale and also certainly exported. The cupriferous rocks, in which the island was rich, were diligently sought for by the Sardinians by an eager work of excavation and selection, in trenches, galleries and wells; as Taramelli has been able to verify

¹ Sergi, G., "Crani antichi della Sardegna," *Atti Soc. Rom. Antrop.*, xiii, 1907, fasc. 1.

² Patroni, G., "L' origine del nuraghe' sardo e le relazioni della Sardegna con l' Oriente," *Atene e Roma*, xix, 1916, Nos. 211–12–13.

by a series of investigations.¹ The remains, which he also found, of tin minerals in the form of cassiterite, show that importation from Eastern Europe was equally active to provide the material missing in the island and necessary for the preparation of bronze. It has also been stated that the Sardinians provided war material for the confederation of the "peoples of the sea" or their allies, the Libyans, who attacked Egypt in the twelfth century B.C.

Whilst the civilization of the dolmen and megalithic monuments flourished in Western Europe and in the Mediterranean, there was a different civilization in Central Europe; here we find a people who lived in the lake-regions on pile-structures (palafitte), a people whose history, says Professor Pigorini, "is written only in the refuse of their daily life, covered to-day by water and peat-bogs."² This people descended into Lombardy and occupied the ponds and lakes. Later, or perhaps contemporaneously, their kindred from the valley of the Danube penetrated into Venetia along the valley of the Adige; when they reached the Po they crossed it and invaded Emilia as far as the sub-Appennine hills. Their organisation appears very rigid and, I should say, inflexible, judging from the fact that wherever they settled to construct their stations they religiously erected a pile-dwelling, even though the spot was elevated and unadapted for such a construction: this is shown by divers pile-dwellings situated on hills. These little towns, with streets and houses all built on wooden posts, are called "Terremare."

These terremare are always quadrilateral, of a trapezoidal shape, closed by a rampart and a moat, across which was a single bridge which could be easily removed. This great enclosure was therefore a kind of fortress: in the interior it was divided by streets which crossed each other at right angles; these streets are banks of earth held up by rows of stakes, as was each house. A sacred part of the little town was reserved in the middle of the eastern side: it was a higher, quadrilateral area, to which, as it was surrounded by a moat, it was not possible to attain except by bridges. This little town, consisting of wooden houses regularly arranged, was many times destroyed and rebuilt as the years passed, for this happened as soon as the refuse filled up the space underlying each house; but each time the same regularity and order reappeared in the new town, thus excluding any individual initiative. This strict observance of rules implies a rigorous social organisation, a disciplined people, and a great respect for tradition. In their little towns the arrangement is identical with that which we find in "Roma quadrata," the city of Romulus; the highest part, that quadrilateral "area" described above, appears like the germ of the "arx," the prætorium and the forum.³ Moreover, the objects characteristic

¹ Taramelli, A., "I problemi archeologici della Sardegna primitiva," *Riv. di Antrop.*, xx, 1916.

² Pigorini, L., "La più antiche civiltà dell' Italia," *Discorso letto nella seduta della R. Accademia dei Lincei, il 7 Giugno, 1903.*

³ Pigorini, L., "Gli abitanti primitivi dell' Italia," *loc. cit.* See also an article by W. Warde Fowler, published in the *Journ. of Roman Studies*, 1912, and an article by E. A. Horton, published in the *Rev. d'Ethnogr. et de Soc.*, 1913.

of the *terremare*-dwellers have been found in regions nearest the *Urbs*, that is in Sabine and in Marsica. On these resemblances depend the great importance of the *terremara*, which was the mother of the civilization of Latium, a very humble mother, as we find her in the Po valley. Without writing and without any indication of figured art, in possession of bronze which was melted but not hammered out, with her pottery almost without decoration—she was inferior in æsthetic taste to the Mediterranean civilization of the neolithic hut-dwellers. The difference appears evident even in the funeral rites, which demanded the cremation of the dead; this had to take place outside the *terremara*, so that it might not become a prey to fire; the few bones which remained among the ashes were collected in rude ossuaries, which were left uncovered and without funeral furniture. Sometimes these ossuaries have been found in a simulacrum of a pile-dwelling, fashioned like a *terremara* with its surrounding moat and wooden bridges at each side; this was the city of the dead. As we see, the bridge was an important part of all these constructions: it was the finishing point of the work, as certainly when the work was finished communications would be established and probably the bridge was inaugurated with solemnity and certain rites over which a priest would preside; the great importance of the *pontifex* is explained by its name.

Towards the end of the second millennium B.C., a great movement of peoples who came down from the north took place; the pile-dwellings of Eastern Lombardy and the *terremare* of Western Emilia were abandoned by their inhabitants. They had certainly been hunted out, while, on the other hand, the Ligures remained in the western regions of the Po valley until the time of the Gallic hordes. The dwellers in the *terremare* who were hunted from their homes by the Umbro-Sabelli were driven towards the Marche and the Tiber valley, and it seems that some reached the shores of the Ionic sea. If, really, as everything leads us to believe, their descendants were the Latins, the founders of Rome, it is necessary to say that their penury of brilliant gifts was perhaps compensated by a quality for organisation, and a spirit of discipline and frugality in their lives, which qualities we in fact find in the ancient Romans. Certainly their language was that called “Aryan,” as was Aryan the language of the Umbrians, who also practised the cremation of corpses. The Osci, the Sabines, the Samnites, and other Sabellic peoples were Aryans or Aryanised, although they inhumated their dead instead of burning it. It is possible that the founders of Rome consisted of both families, as we find both rites in ancient Rome. In the Anthropological Museum of the University of Rome are kept twenty-eight skulls, all anterior to or contemporaneous with the walls of Servius Tullius; the great part came from a burial ground on the Esquiline. These skulls give an idea of a part of the population of Rome at the time of the Kings, but we have no idea of that other population which burnt its dead and left us only the ashes which are found in the famous hut-shaped urns of Latium. The population of the buried is

prevalently made up of the Mediterranean Race,¹ with skulls which are more or less long, a somewhat long face and a nose of medium thinness ; but the population of the burnt, which must be that which is descended from the terremare-dwellers, was, perhaps, not of a Mediterranean type, or was not so to the same degree, as, given its derivation, it may have been made up mainly of representatives of *H. alpinus*. These hypotheses will remain always impossible to confirm.

We can say that the end of the second millennium B.C., especially the twelfth to eleventh centuries B.C., represent the period of settlement of the ethnical races in Italy as in a great part of the Mediterranean. The Umbro-Sabelli had chased the terremare-dwellers from Northern Italy, but had not remained there. There flourished the Euganeans, whose splendid necropolis is found at Este, near Padua, as the necropolis of the Veneti is found at S. Lucia, near Trieste. The beginning of this period bears the name of Hallstattian civilization, from the city of Hallstatt in Salzburg, where archaeologists have found the first iron age very well represented, and anthropologists a population with an elongated skull, which might be of a Nordic type. It was this same type which, according to some authors, spread from Gaul to Palestine and Africa in excursions over three continents. This type seems to have descended—certainly mixed with Alpines—into Italy with the civilization of Villanova, and must have entered in some proportion into the ethnical composition of the “Eternal City.” Thus it came about that the three fundamental European races, *H. mediterraneus*, *H. alpinus* and *H. nordicus*, had their representatives among the ancient Romans, although the skeletal remains of the Mediterranean and the Northerners are difficult to distinguish from each other. It is also possible that the Northerners belonged to the aristocrats who preferred to burn their dead. In the calm tenacity and quiet growth of the Roman people perhaps the descendants of *H. nordicus* represented the turbulent restlessness of violent and bold individuals which, even in Roman history, one is able to discern from time to time.

In the eighth to seventh centuries B.C., whilst on the one side of the Apennines the form of the sepulchres and the type of furniture is unchanged, the use of tumulus burials and architectonic tombs with rich furnishings of precious metals, bronze, and terracottas of one or more colours, and with sculptures in stone, is diffused in Etruria : the Etruscan vaults show the astonished visitor a truly Oriental luxury. The symbols there found are also Oriental, neither the alphabet nor the writing seems Italic. All this is accompanied by a perfection in the technique of extracting and working iron and of hammering-out bronze, by a splendour of filigree jewels and by the perfection of the culture of vines and grain. It is a new population ; when and whence come ?

We must return to the end of the second millennium B.C., to that ethnic turmoil

¹ Sergi, G., “Studi di antropologia laziale,” *Bull. R. Accad. med. di Roma*, xxi, 1895, fasc. 1°; Giuffrida-Ruggeri, V., “Elenco del materiale scheletrico preistorico e protostorico del Lazio,” *Atti Soc. Rom. Antrop.*, xii, 1906, fasc. 3.

of the so-called "peoples of the sea," who sought other lands, pressed forward and constrained to leave their homes by the Aryan vanguards which came down from the north. It was then that the "Tursha," with other allies, attacked Egypt on their way from their homes in Asia Minor. Their sad experiences and other undertakings which failed must have taught them that in another direction, towards the barbaric regions of the West, and not against the powerful kingdom of the Pharaohs, their attempt might be more successful. So it was that in the eleventh century B.C.—as Professor Montelius believes, and as Sir Arthur Evans and other authoritative archæologists allow—the Tursha directed their prows to the distant western peninsula, the far-fabled Hesperia, and this time most probably brought their families; still, in Tuscany we see a physical type which is not common to the rest of Italy, a long, thin face, with somewhat wide cheek-bones, especially to be seen among the women.

The Umbrians were vanquished, but not chased away. The skulls taken from Etruscan tombs are numerous and in great majority dolicho-mesaticephalic, that is, of the long Mediterranean type: the remainder, of the Eurasian type, are attributed to the pre-existing and remaining Umbrians, although certainly the Umbrians were not all brachycephals. This mixture of dolichocephals and brachycephals in central Italy has always been maintained; but the question "Who were the Italici?" seems to us perfectly superfluous, as neither the Etruscans nor the Umbrians were the most ancient inhabitants of the country. On the other hand, neither they nor the *terremare*-dwellers, nor the Ligures or others had any conception of Italy, whose name appeared for the first time much later, in a little corner of Calabria. Italy is an historic formation and all the antecedent races who contributed to her making are equally Italian.

But if the name "Italici" is understood in a linguistic sense, then it must refer to the new-comers who spoke an Aryan tongue. Unfortunately it is extremely difficult to recognise the prehistoric Aryan linguistic area: many peoples may have spoken an Aryan tongue who (as happens even now) did not understand each other. If, as it seems from the latest discoveries, the Hittites spoke an Aryan language, as they were in Asia Minor near the original home of the Etruscans, it can no longer be thought impossible that the Etruscans also spoke an Aryan tongue, and because we cannot yet understand their language is not a sufficient reason for classifying the Etruscans as Anaryans definitively and without appeal.