

pagan litanies, for which, about A.D. 467, Mamertus, Bishop of Vienne, and later on St. Ambrose and Gregory the Great substituted Christian ones to be used as processional.¹

The following is the torchlight processional prayer chanted by women in the Hauran :—

يا ام الغيث غيثينا	Ya Umm ul-Ghayth, gheetheena.	O Mother of Showers rain on us.
واسقي اليوم اراضيها	Waskee il yom-araadeena.	Give drink to our fields to-day.
يا الله مطريا الله خير	Ya Allah matar, ya Allah Khayr.	O Allah! (give) rain, O Allah (give) plenty.
تسقي الطريس والخيول	Taskee il-tareess wal- Khayl.	Give drink to the teth- ered cattle and horses.
يا الله مطريا دايم	Ya Allah matar, ya Dayim.	O Allah! (give) rain, O Eternal One.
تسقي زرعنا الدايم	Taskee zar'ana il-nayim.	Give drink to our sleep- ing crops.

The difference between this prayer and that chanted by the peasant-women of Southern Palestine is striking.

WHAT HAS BECOME OF THE PHILISTINES ?

A BIOLOGIST'S POINT OF VIEW.

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IT is with no small amount of hesitation that one attempts to deal with a problem, the subject matter of which has hitherto been the legitimate *terrain* of the historian and archaeologist. The origin of the Philistines, or rather their cultural and social relationship to other nations and peoples, has been the work of the Egyptologist and the students of the dawn of European History. Their history as a people is only known to us from the Bible, where they played the unenviable part of a feared and dangerous foe and rival to the

¹ See Blunt's *Key to the Book of Common Prayer*; Bishop Barry's *Teachers' Prayer Book*.

Israelites. Of Philistine records themselves we have next to nothing. Archaeological research has been confined to the exhaustive exploration of a Palestine city, Gezer, excavated for the Palestine Fund by Dr. R. A. Stewart-Macalister, besides tentative diggings which were undertaken at Beth-Shemesh which the war brought to a speedy end. To-day the Palestine Government is encouraging, to its utmost, archaeological research and it is to be sincerely hoped that from the diggings at Ascalon and Beisan some valuable information may be obtained. The Gezer finds were such as to show an identity of relationship between their culture and that of the latest Minoan period. As regards anthropological material only five undoubted Philistine graves are known.

The ultimate fate of this interesting people would seem, however, to be wrapped in greater obscurity, than either their origin or their history. When the Philistines ceased from troubling, the Israelites were weary and at rest, and the doings of their erst-while enemy ceased to interest the national historian. It was a people whose existence was bound up in strife and yet who have disappeared from the page of history without leaving a trace.

In a field where research has so far offered but little, it is doubtless an act of temerity for one to plunge, who is neither historian, archaeologist or Egyptologist. But it is as a student of Genetics, that youngest offshoot of biology, that the writer ventures to attack the problem, and to show not only who the Philistine was, but where he disappeared and where he may still be found. In 1911 the writer published a paper on the heredity of facial characteristics of the Jew. Since then further observations have accumulated and all tend to prove the substantial accuracy of the conclusions there arrived at. The approach to the problem that was then made was as strictly objective as the circumstances allowed, but no consideration of the interpretation of the results obtained in relation to the facts of history was undertaken. In 1922 a further paper was published by the writer which filled this gap to some extent, and in that article the problem of the Philistines was definitely stated (see p. 43, n. 3).

In order to see the problem in its correct perspective it is best that the results of these two investigations should be briefly restated.

Amongst the Jewish population of to-day as met with, both in the East End (mostly Russian and Polish) and in the West End (largely German) communities of London Jewry, it was observed that three

main types of Jewish countenance could be distinguished. They may be designated by the names of—Hittite, Semitic, Pseudo-Gentile or Philistine.

(1) *The Hittite type.*—By this is meant that type of face which is almost invariably considered to be characteristically Jewish. The face is broad, the forehead high and sloping, the nose big, curved more or less hooked, and tending to be fleshy. The curved outline of the lateral contour of the nostril, or the "nostrility," as Joseph Jacobs termed it, is pronounced. The eyes are of fair size, the upper lids heavy and inclined to droop, the lower often showing marked folds, and as age advances becoming puffy. The mouth is generally small and the lips refined, but not uncommonly the lips may be of a heavier type. The essential feature is that the face is characterized by a general roundness. This, apparent enough in the nose, will be readily discovered to be equally true of the chin, of the angle of the jaw, of the fronto-temporal angle of the forehead and of the zygomatic arches. The whole face is rounded. There is an entire absence of clear, sharp cut outline to the features.

Associated with the Hittite type of face is to be found in the majority of cases a round head, and even extreme brachycephaly, in many cases associated with a high type of hypsibrachicephaly. Indeed, the high back of the head with the marked slope of the forehead in a male may be a very striking feature. Most generally, but by no means invariably, is the Hittite type of face associated with a stout thick trunk, short neck and short legs, the calves of which are, generally, strikingly well developed. The combination of all these characters in an individual gives rise to an appearance which is generally described as typically Jewish, and is at once the ready material of the caricaturist of to-day as it was of the ancient artists who produced the well-known Hittite figures, the sun god of Boghaz-Keui, c. 1300 B.C., and those of the god and king at Ibriz, c. 750 B.C.

(2) *The Semitic type.*—Here the face is characterized by its general length, by the heaviness of its features, especially that of the jaw and mouth. The nose is long, but in contrast to the Hittite is not hooked. Its breadth, too, at its termination is considerable, the nostrils generally big, but longer, antero-posteriorly than transversely. The mouth is always large and straight. The lips coarse and often everted. The chin large, heavy and downward rather than forward in its extension. The forehead is narrow, high and sloping. The brows are frequently much developed and tend to give the face a rather harsh and unsympathetic expression. The eyes are generally large, and the eyelids may be, as in the Hittite type, heavy, but are less often so. The chief character of this facial type is that of length of feature combined with heaviness. The Semitic type of face is generally combined with a dolicocephalic head and with high stature. Where opportunity has allowed, it has been

noted that where this type of person is tall, the height is not so much due to length of body as in the Hittite type, but is due, equally, to both body and leg development. As regards the latter, the calves tend to appear poorly developed whilst the peronei group of muscles is prominent. For good examples of the Semitic type, Seligman's paper on the Kababish tribe should be consulted.¹

In the paper referred to, dealing with the historic aspect of the subject, it was demonstrated that the Semitic type just described is an exact representation both of the ancient Habiru and of the Amorite, as depicted by the artists of ancient Egypt, and the theory was developed, that in it was to be seen not only the basal type of the original early Israelite, but also of the Bedouin Arab as he was known to the Egyptian.

(3) *Pseudo-Gentile or Philistine type*.—Amongst Jews of the purest Jewish descent it is common to find that there occur individuals who are usually considered to be quite non-Jewish looking. By non-Jewish it is found that what is meant is that the facial appearance is totally unlike the Hittite type and very different from the Semitic. The features are small, the nose especially so, and may be even *retroussé*. The general cast of features is predominantly Western European in character. The question of colouration will be considered later, but individuals of this type may be quite fair, and this, together with the small delicate features, has led some authors, such as Fishberg and others, to the erroneous view that their presence in the Jewish community is due to an admixture of Teutonic and Slavonic blood. If, however, this type be more carefully considered, certain features may be discovered which tend to separate many of the individuals possessing them from their non-Jewish Teutonic fellows. In the first place, it is very common to find in the "Pseudo-Gentile" Jew that the nose and brow are in one line as in the classical Greek. The features, too, are not strictly squared as in the Teuton, where a sharp angular character is very often to be observed about the contour of the nose, the nostrils, the angle of jaw and chin, as well as that of the temple region of the forehead. A further character, which is of rather peculiar interest, is that, in the Pseudo-Gentile, the nose, whilst still retaining its shortness of length and absence of roundness, sometimes tends to spread laterally at its lower junction with the face. This character is one not seen amongst Teutonic people with the short refined type of nose. In the Pseudo-Gentile the squareness just fails. The angles are, as it were, just rubbed off. The head type is almost invariably dolicocephalic, rarely brachycephalic.

Associated with this type of face one may meet individuals either tall or short, though the majority tend to be short. The characteristic of this type is smallness and refinement associated with a strong tendency to a squareness of features which often just fails to be complete.

¹ C. Seligman, "Some Aspects of the Hamitic Problem in the Anglo-Egyptian Sudan," *Journ. Roy. Anthropol. Soc.*, vol. xliii (1913), p. 593.

I have found this type of face amongst Jews from all parts of Eastern Europe as well as in English Jews of the purest German-Jewish descent. In one such family of five sons all showed the Greek type of straight nose and brow-line. In Cairo and Palestine the same type was found amongst the Sephardim as well as the Ashkenazim. In a Jewish school in Cairo there were seven children with this classical type of face, in most the nose and brow in one perfectly straight line. One of the seven, however, turned out to be a non-Jew—she was a Greek!

These three types of features, all to be found in communities of pure Ashkenazic Jews, may, with a little practice, be readily recognized by any close observer. It will be found that whilst the majority of persons, say 50 per cent., are frankly Hittite, 15 per cent. frankly Semitic, and 20 per cent. Pseudo-Gentile, that there are some 15 per cent. of the whole who cannot be readily placed in any of these groups, and this will be found to be due to the fact that in such persons the types are mixed. Thus, one meets with the roundedness of the Hittite superimposed on the long and heavy features of the Semite, giving rise to a very unsympathetic type, and the squareness of feature of the Pseudo-Gentile may be masked by the superimposition of some of the characters of the Semitic type, producing a face with regular and refined features, but in which the nose in particular is long, narrow and straight.

Again, whilst in general the Hittite type of face is linked to roundedness of head and the Semitic type to length of skull, the two may be interchanged; though it is very rarely that the Pseudo-Gentile type is met except in relation to a fairly long head shape.

In this rather cursory survey and classification, omission is made of the occurrence of the Mongolian and Negroid types of facial character, as these are in general directly traceable to specific race-mixture, and in Western Europe form but a very minute proportion of the whole.

It is very commonly asserted that the Jewish type varies directly with that of the surrounding non-Jewish population. The evidence of this view is to be found in the works of Fishberg.¹ A valuable and extensive collection of measurements made by himself has been mixed with others from all sources and the result is anything but satisfactory.

Thus Fishberg finds that the long axis measurement of the head corresponds very closely with that of the local non-Jew, whilst the broad axis does not correspond. Nevertheless, according to

¹ M. Fishberg. *The Jews: a study of Race and Environment*, 1911. "Materials for the Physical Anthropology of the Eastern Jews," *Memoirs of the Amer. Anthropol. and Ethnol. Soc.* Vol. I, Pt. 1, 1905.

Fishberg's tables, the cephalic index of Jew and non-Jew corresponds with the greatest accuracy, a result difficult to understand. Stature of Jew varies with that of non-Jew, but colouration is almost inversely correlated. Fishberg would see intermixture everywhere. But in order to bring about the results he would deduce, intermarriage would perforce have been on such a scale that it becomes increasingly difficult to understand why there is neither historical evidence for such admixture, nor why the resultant community should have remained so loyal to their faith in face of the manifold disadvantages it conferred on them *vis-à-vis* their neighbours.

In the writer's opinion there is very little solid fact to substantiate the view that the Jewish type varies directly and in accordance with the non-Jewish physical type of the district, or that European Jews are infiltrated with non-Jewish local blood. In certain cases where the facts support the theory, such as in the Caucasus and in the Yemen, it is known that the Jewish stocks have been largely blended with local native blood. Whilst in the Mediterranean basin, where the Jewish communities are darker in colour than those in the rest of Europe, this is due to the fact that such communities are made up of Sephardic Jews, who as Marranos brought with them into exile no small amount of Moorish and Iberian admixture. In the rest of Europe up till fifty years ago admixture was very rare.

Perhaps the most classical proof of the contention that the Jewish community does not automatically adapt itself to its surroundings, is that of the *Cuetas* in the Balearic Isles. The *Cuetas* (a term of reproach) were Jews who fled in the days of the Inquisition, from Spain to Majorca and Minorca and there became admitted *en masse* to the Catholic Church. For three hundred years they have, though themselves the most devout of Catholics, lived without intermarrying with the native Christians, who appear to regard them as a lower caste. To-day, a reliable observer has informed the writer that a visit to their quarter brings one at once into the atmosphere of the Ghetto. All the Jewish types and those most pronounced are to be seen, whilst red hair, which is a rarity amongst the native Majorcans, is quite common amongst these people.

It is possible that in the more established communities in the West of Europe and America, a slight shifting of type is taking place, because the Anglicized or Americanized Jew, half ashamed of

his recognizable features, tends to seek him a mate of the Pseudo-Gentile type, and thus by sexual selection it is possible that a genuine change of type may take place. It was made clear to the writer when visiting the Cairene Jewish community, that the type of beauty there preferred was not, as in Western Europe, the Pseudo-Gentile, but the Hittite, *i.e.*, the Hittite type refined and delicate as it can be to-day and as it undoubtedly could be in the days of old, as is witnessed by the charming Hittite faces in the plaques in the British Museum derived from the Palace of Rameses III.¹

So much for the three main types of Jewish physiognomy. Luschan² was the first to emphasize the importance of the Hittite or Armenoid factor. He assumed the Semitic one, though he did not define it in words, but he thought the blonde type with non-Jewish features was due to mixture with the Amorites in the early days of the race. In this view Luschan would seem to the present writer to be in error. The possession of blonde hair and the association with it of small squarish Teutonic-like features is by no means general or even the most common. The blonde colouring may very likely be derived from the Amorite, but the Pseudo-Gentile features are, as we shall see, the inheritance of the Philistine.

Before, however, the question of the Philistine is directly approached it is necessary to lay before the reader the results of the writer's research on the inheritance of the facial types already described.³ The facts collected in the original paper have been augmented by a large number of observations which confirm the original view put forward.

These results can be summarized thus :

1. It is possible to analyze Jewish facial character on a Mendelian basis and obtain perfectly consistent results.
2. The essential character of the Hittite type is "roundedness," which, superimposed on either the Semitic or Pseudo-Gentile group of facial character, will cause the face to appear Armenoid in type and to take on what the world recognizes as a "Jewish cast."

British Museum, Porcelain Tile from Tell el-Yehudiyeh. No. 12336.

² Felix von Luschan. "Die Anthropologische Stellung der Juden." *Correspondenz-Blatten d. Deutschen. Anthropol. Gesell.* Vol. XXIII (1892), p. 94. See also "The Early Inhabitants of Asia." *Huxley Memorial Lecture. Journ. Roy. Anthropol. Inst. of Gr. Britain and Ireland.* Vol. XLI (1911), p. 221.

³ "Heredity and the Jew," *Journ. Genetics.* Vol. I (1911); "Racial Origins of Jewish Types," *Trans. Jewish Hist. Soc. of England.* Vol. IX (1922); *Palestine Reclaimed* (1921).

3. Amongst the English and Teutonic peoples are a majority of persons characterized by short small features whose outstanding note is squareness.
4. When these two opposing characters "Roundedness and Squareness" are brought into allelomorphic apposition by the mating of Jew and Gentile or Gentile and Jew, the result is uniform, *viz.*, Squareness is dominant to Roundedness.
5. When the "Squareness" of the Gentile is in the same manner allied to the "length" and heaviness of the Semitic features the result appears to be equally the dominance of the short Teutonic. The numbers, however, of this type of mating are much fewer than of the former.
6. The mating of Hybrids (*i.e.*, the offspring of Jew and Gentile) by Jew or Gentile gives, as is to be expected, half rounded and half square typed individuals in the one case, whilst in the other all the offsprings are square or Gentile in type.

At the time of publication of the paper referred to, no example of an F. 2 family *i.e.*, a family arising from the mating of F. 1 \times F. 1, to use the Mendelian expression, for the offspring of the two first cross hybrids had come to hand. Since then, however, the writer has had the good fortune to find two individual hybrids (Jew-Gentile parentage) of unquestionably "square" type who had but one son, and he (brought up in a devoutly Christian atmosphere) is so intensely "Armenoid," rounded, or Jewish in type, as to be a source of great embarrassment to his parents.

7. The mating of the Armenoid, Hittite, or "rounded" Jew to the Pseudo-Gentile produces, as was stated in the original paper, a result entirely different to that between the same "rounded" Jew and the "Square" Teuton. For whilst, in the latter mating, the squareness of the Teuton is dominant, in the former the roundedness of the "Armenoid" Jew is dominant to the squareness of the Pseudo-Gentile.

This latter result was recorded in the original paper, but its importance would appear to have been overlooked by anthropologists.¹

¹ It is of course clear that characters, however closely resembling each other, which behave in regard to a third character in an entirely different manner, must themselves be due to entirely different "genes." In Mendelian work, such a state of affairs is quite common: thus, the existence of two types of whites both in Plants and Animals is recognized on all hands. Indeed, the most specific results, such as immunity to the attacks of fungi, may be conferred by different and independent "genes" or factors, either of which may produce a degree of immunity indistinguishable from that produced by its fellow. Such an example has very recently been described by the writer in respect to the immunity of the Potato to Wart Disease.

The deduction may then be drawn with complete confidence, that whatever be the source of the Pseudo-Gentile character that is found in Jewish communities the world over, it is not derived from the same source as that from which the "squareness" of the Teutonic feature is derived.

In the first paper on this subject, this independence of the Pseudo-Gentile type of faces was emphasized, and its relation to a possible Amorite infusion suggested. Since then further study has convinced the writer that whether the blonde hair and colouring was of Amorite origin or no, the Amorite himself was not the source of the Pseudo-Gentile type amongst Jews. The reasons were indeed clear, for a study of the many Egyptian bas-relief portraits of the Amorites showed that they were most certainly Semitic, and of the same character as the people the Egyptians spoke of, as early as 1400 B.C., as "Habiru," a people almost certainly to be equated with the Hebrews. Indeed, on cultural grounds, Clay had shown them to be a section of Northern Semites.¹ To whom then was to be attributed the source of the Pseudo-Gentile? In the paper already cited reasons were shown for the belief that he was no other than the Philistine.

It will be necessary at this point to review the facts so far as we know them, as to who the Philistines were, whence they came, of what race they were, and what was their physical appearance.

To all these questions it is possible to give a reasonably complete and satisfactory answer.

To the further and perhaps the more important question: What became of the Philistines? the answer is neither complete nor altogether satisfactory, but it is hoped to show that there is good reason to believe that their disappearance as a national and racial entity coincided with their complete absorption into the body of the Jewish Nation.

(To be concluded.)

¹ *Amurru, the Home of the Northern Semites* (1909).