



On the Racial Characteristics of Modern Jews

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Source: *The Journal of the Anthropological Institute of Great Britain and Ireland*, Vol. 15 (1886), pp. 23-62

Published by: [Royal Anthropological Institute of Great Britain and Ireland](#)

Stable URL: <http://www.jstor.org/stable/2841906>

Accessed: 14/06/2014 00:37

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information of the last is second-hand and inaccurate. No one of them makes out a special type of the Jews with fair or red hair, but they all firmly believe that neither intermarriage nor climate has had any influence on the physique of the Jews, and that the Jews of the present time greatly resemble those on the monuments of Egypt and Assyria. I have already doubted this, and stated my view as to the impossibility of two separate emigrations of two types. At all events no certainty can be attached to reports of the physical condition of the Jews until individuals are examined in the various parts of the world. Jerusalem, for instance, possesses Jews of the greatest variety and the beginning of the system of measurement could be made there, but they are all nearly half famished. Next, the state of health and the relation of the height to the size of the chest among the Jews in Yemen and Kurdistân, where they are shepherds, agriculturists, and artisans of all kinds, will have to be investigated. Only then shall we be able to decide why the descendants of the Macchabean warriors and of those who kept Titus and Hadrian thoroughly occupied for several years, are now proportionally less fit for military service and more delicate in health than their Christian brethren.

The following paper was read by the author:—

On the RACIAL CHARACTERISTICS of MODERN JEWS.

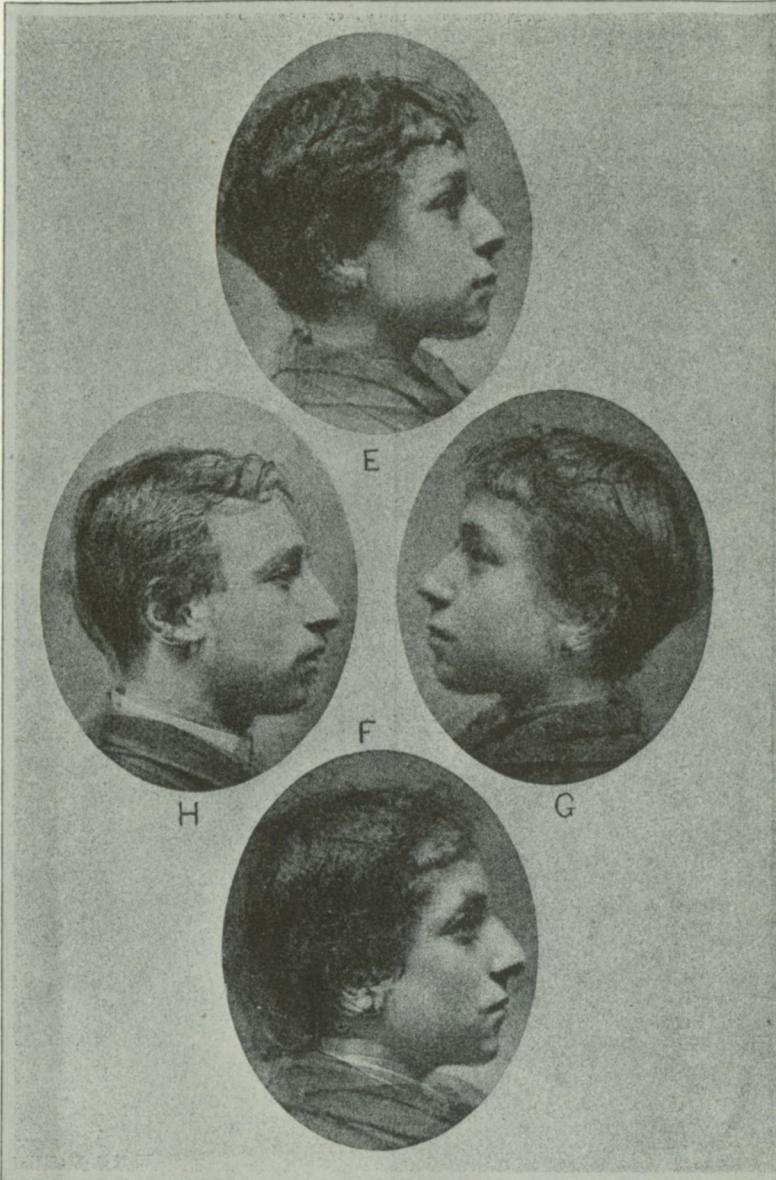
By JOSEPH JACOBS, Esq., B.A.

[WITH PLATES I AND II.]

IN the following research I have endeavoured to bring together all the data, scientific or historical, which bear upon the question of the purity of the Jewish race. I have found it necessary for this purpose to scrutinise somewhat closely many Jewish qualities and habits that have hitherto been regarded as peculiarly the results of race. Most of these, however, have been found to be due to social causes, and cannot therefore be regarded as primarily racial. Nevertheless I trust even the discussion of the secondarily racial qualities of Jews with which this paper opens may not be without interest to students of anthropology. They exhibit, I conceive, a striking example of the influence which the social life of man has upon his physical qualities. For a decision on the main question, I have been forced to turn

THE JEWISH TYPE.

Profile.

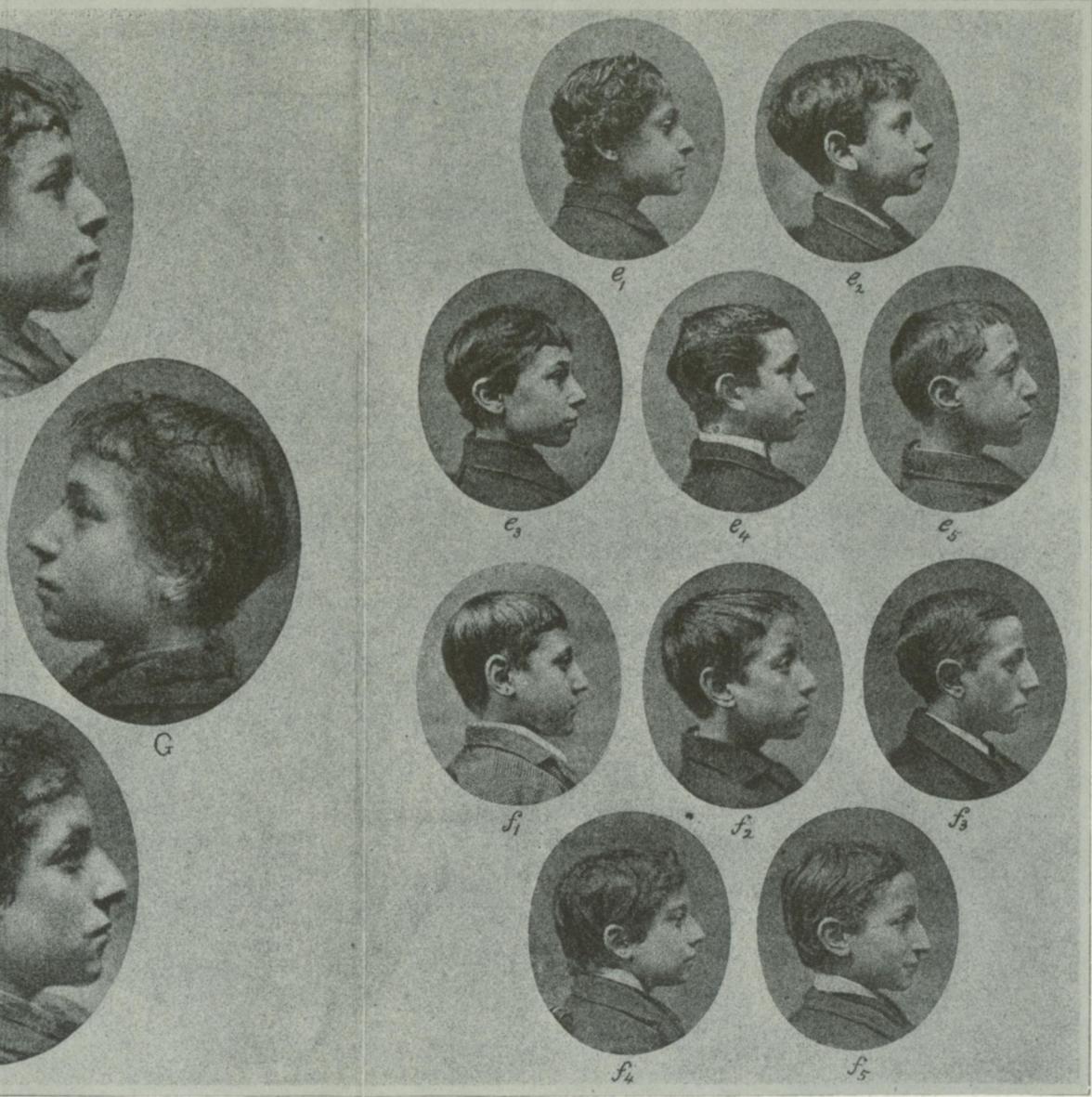


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COMPOSITES.

Component

ILLUSTRATIONS OF COMPOSITE PORTRAITURE.



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to history, which is on this occasion more than usually Janus-faced.

We have first of all to determine which are the Jews whose racial qualities we are to determine. I have made the following estimate, necessarily rough, of the various classes of persons now living, who may claim to be Jews by religion or by birth, or by both.¹

Name.	Country.	Number.	Per cent. of whole.
A. <i>Jews both by religion and by birth</i> .. ..	.. ..	6,925,000	98·9
Ashkenazim	Teutonia and Slavonia	6,500,000	92·8
Sephardim	Romance, Levant, Africa	425,000	6·1
Samaritans ?	Nablus	150	..
B. <i>Jews by religion, but not by birth</i> .. ..	.. ..	75,000	1·1
Falashas ²	Abyssinia	50,000	..
Karaites	Crimea	6,000	..
Daggatouns, &c. ³	Sahara	10,000	..
Beni-Israel ⁴	Bombay	6,500	..
Cochin ⁵	Cochin	1,600	..
C. <i>Jews by birth, but not by religion</i> .. ..	.. ..	12,000	0·2
Chuetas or Anussim ⁶	Balearic Is.	6,000	..
Maiminen ⁷	Salonichi	4,000	..
G'did al Islam ⁸	Khorassan	2,000	..

Besides these, there exist a large number of persons, mostly in Europe, who have Jewish blood in their veins as descendants of Jewish converts. This is specially the case in Spain, where Jewish blood has filtrated through all ranks of society up to the very highest, and the same is said of certain districts of

¹ The best enumeration of Jews is by M. I. Loeb, art. "Juifs," in Saint Martin's *Dictionnaire de Geographie*: his chief errors are making the number of Russian Jews too low by a million, and the Falashas 200,000 instead of 50,000.

² Rohlf's in Petermann "Mittheil," 1883, p. 213.

³ Serour, "Les Daggatouns," 1880. I include in this number the Mavambu or Negro-Jews of the Loango Coast (*vide* Andree, "Volkskunde d. Juden," 1881, p. 90).

⁴ Census of India, 1881, gives 7,952 Jews in British Bombay.

⁵ "Jüd. Littblt," 1883, No. 36. The number of Jews in China is unknown.

⁶ Descendants of Spanish Jews still isolated. Lewin, *ibid.*, No. 30.

⁷ Descendants of followers of the Jewish "Mahdi," Sabbathai Zebi. Graetz in "Monatsft," 1884, Feb.

⁸ Jews forcibly converted to Islam thirty years ago, "Vesillo Israel," April, 1884.

mid France. The anthropology of Jews can never be satisfactorily settled till careful examination of these various data has shown their resemblances and differences. From the common qualities of classes A and B we can determine qualities due to religion; from those common to A and C, but differing in B, we might draw valuable conclusions as to influences of race. As a matter of fact, for the second and third classes we have practically no data to work with, except the vague impressions of travellers, and we must therefore confine our attention to the two chief divisions of Jews: (1) Sephardim, mostly descendants of the refugees from Spain in 1492, and now residing on the littoral of the Mediterranean,¹ and (2) Ashkenazim, dwelling in all the countries inhabited by Teutons or Slavs. The latter form an overwhelming majority (93 per cent.), and our information about them is tolerably extensive and reliable.

What are the qualities, if any, that we are to regard as *racially* characteristic of Jews? Much vague declamation has been spoken and written on this subject. All the moral, social, and intellectual qualities of Jews have been spoken of as being theirs by right of birth in its physical sense. Jews differ from others in all these points, it is true, as I have partly shown elsewhere.² But the differences are due, in my opinion, to the combined effect of their social isolation and of their own traditions and customs, and if they have nowadays any hereditary predisposition towards certain habits and callings, these can only be regarded as secondarily racial, acquired hereditary tendencies which cannot be brought forward as proof of racial purity. If all the Johns and Maries of Europe were to be shut up in ghetti for a couple of centuries they would undoubtedly show peculiarities in habits and thought; they would develop a Johannine psychology, as it were, and most probably, as we shall see, a Johannine biostatics. And there is another reason why the psychological traits of Jews must be omitted for the present from any research which claims to be scientific. Science was to Condillac a hundred years ago only a well-constructed terminology (*une langage bien faite*); nowadays science is measurement accurately calculated. Now though I hope to show on some future occasion that the intellectual capacity of Jews, if not absolutely, is yet relatively measurable as compared with that of other Europeans, I should still hesitate to qualify these distinctions as racial in a strict sense. They seem more a matter of temperament, which is at best but the tone of race, and is much more modifiable by education and environment than

¹ I have reckoned in with the Sephardim the Italian Jews and those under Moslem rule.

² *Vide* my "Studies in Jewish Statistics" (*Jewish Chronicle* Office).

purely racial characteristics, so that it may happen that widely diverse races, *e.g.*, Jews and Frenchmen, may have much the same temperament. Under any circumstances it would be difficult for a Jew to avoid subjective bias in dealing with these matters, and where that bias leads to any assertion of superiority the result is as unsatisfactory from the point of view of science as it is from that of taste. It remains then to consider those qualities of Jews which depend on physical properties, and these have the further advantage of lending themselves to accurate measurement. These are (1) the vital statistics of Jews—marriages, births, deaths, diseases—and (2) their anthropometry or bodily measurements.

I. *Vital Statistics.*

As I have already given in my "Studies in Jewish Statistics" the results of my search among statistical publications on Jewish biostatistics, I will here content myself with giving a summary of the conclusions at which I have arrived. These are as follows:—¹

1st. Jews have a less marriage rate, less birth rate, and less death rate than their neighbours, but the less marriage and birth rate are due in large measure to the less mortality of Jewish children. The larger number of children living causes the percentages of marriages and births, really larger as regards adults, to seem smaller when reckoned on the whole population.

2nd. Jews and Jewesses marry earlier than the surrounding populations. Cousins intermarry more frequently, perhaps three times as often.

3rd. Jews have larger families, though fewer plural births. On the other hand, mixed marriages between Jews and persons of other race are comparatively infertile.

4th. In Jewish confinements there are more boys, less still-births, and fewer illegitimate births, though the advantage as to still-births disappears among Jewish illegitimate children.

5th. Jews have a smaller mortality of children under five, but this does not hold of Jewish illegitimate children, who die off at much the same high rate as the unfortunate beings of the same class in other sects. Jewish deaths over sixty are generally greater in proportion. Jews commit suicide less frequently.

6th. It has been frequently asserted that Jews enjoy an immunity from certain diseases, notably phthisis and cholera, but the evidence I have on this point is adverse to the claim. There is some indication that they are more liable to diabetes and hæmorrhoids, and they have certainly more insane, deaf-mutes, blind, and colour-blind persons.

¹ *Vide* my "Studies," No. VII, pp. 49 *et seq.*

7th. I would add two social facts of great importance in their bearing on vitality: (a) the vast majority of Jews live in cities; (b) Jews have a larger proportion of poor than the peoples among whom they dwell ("Studies," II and IV).

This long list of divergences between Jewish and general statistics might seem at first sight to imply strongly marked racial differences. But when closely examined, almost all of them are seen to turn on social characteristics. Thus the frequency of consanguineous marriages and the smaller proportion of illegitimate births and of suicides are clearly due to social causes. The same may be said of the earlier age at which Jewish marriages occur,¹ and from this follow their greater fertility, and probably the larger proportion of male births. Again, if less still-births and less mortality under five among their offspring were physical characteristics of all Jewesses, we should find them to some extent at least among illegitimate Jewish births and children.² But as a matter of fact the superiority is confined to legitimacy, and must therefore be attributed for the most part to social causes, the greater care taken of Jewish children, and of Jewish mothers. Thus we are left with only four biostatistical points which cannot be *prima facie* resolved into social phenomena, and may therefore be referred to influences of race. These are—(1) the less number of twins and triplets; (2) the infertility of mixed marriages; (3) the greater longevity of Jews; (4) their alleged special morbidity or liability to disease. The paucity of plural births we may dismiss, as nothing is known of the cause of these.

Infertility of mixed marriages deserves more attention, owing to its important bearings on the main question of this paper. As I may claim to have first drawn attention to the subject, I will here repeat the evidence on which I found it. In Prussia these marriages have been separately registered since 1875, and between that year and 1881 there were 1,676 such marriages, resulting in 2,765, an average of 1.65 to a marriage, whereas during the same period pure Jewish marriages resulted in an average of 4.41 children, or very nearly three times as many ("Zeit. Preuss. Stat.," 1882, p. 239). In Bavaria, between 1876 and 1880, 67 mixed marriages were registered, the resulting offspring being only 76, or only 1.1 per marriage; against 4.7 children to purely Jewish marriages ("Zeit. Bay. Stat.," 1881, pp. 188, 213). This conspicuous infertility also implies greater

¹ The earlier age of puberty may influence this, but I have shown the importance of social and religious causes in my "Studies," VII, where I attempt to connect this phenomenon with the fertility of Babylonian palms.

² F. J. Neumann was the first to use this crucial test (Brentano's "Jahrbuch," 1877).

sterility. Among 56 such marriages where I could ascertain the results, no less than 9 were sterile (18 per cent.), a striking contrast to the number of sterile marriages which I found in 71 marriages between Jewish cousins, where the percentage of sterility was only 5·4 per. cent. (*cf.* "Studies," p. 7). At the same time I must add that I found no other ill results. Of 85 families, only 2 were afflicted, about the same number as would be found among Jews in general, whereas 84 first cousin marriages included no less than 13 in which there were deaf-mutes or lunatics. The uniform infertility of mixed marriages can scarcely be due to any uniformity in the ages of the contracting parties, the chief determining factor of fertility, so that we may take it as a racial phenomenon, or, to make a rather fine distinction, as a phenomenon indicating racial differences.

The *longevity* and *vitality* of Jews are by no means so universally superior as has been thought; the superiority disappears in large measure among Jewish populations which, like those of Galicia and Russia, have a large proportion of day labourers.¹ So far as it is founded on the low death rate, it can be attributed rather to the greater care taken of children under five, which after all means that more weakly individuals are kept alive to carry on an unequal struggle for existence. It certainly would appear extraordinary if Jews enjoyed exceptional vitality, considering the insanitary conditions of their lives in the past, and their weakly constitution in the present. I have been able to obtain some details of the way in which they used to be overcrowded in the ghetti—

Place.	Date.	Jews.	Houses.	Average.	Authority.
Prague ..	1786	7,951	266	29·3	Ficker's "Bevolk.Böhmen," p. 55.
Frankfort ..	1811	2,214	159	13·9	<i>Times</i> , Aug. 8, 1884.
Prague ..	1843	5,646	279	20·3	Ficker, <i>ibid.</i>

And Tchubinsky reports that in 1840 the Jews of Southern Russia used to dwell thirteen in a house, whereas the general population had only from four to five ("Globus," 1880, p. 340). So, too, the military statistics show an extraordinary number of individuals who are unsuitable for military service owing to their weakly constitution (*cf.* Goldstein's paper in "Revue d'Anthropologie," July, 1884). And where any superiority in vitality is

¹ *Cf.* Bergmann, "Beiträge," 1883, pp. 145-6.

shown, this again may be traced to moral and social causes. Jews do not lead "dangerous" lives in the insurance sense (sailors, soldiers, firemen, miners, &c.). The trades which they do exercise, except that of tailoring, seem more long-lived.¹ Further, the Jewish nature does not seem to require stimulants, and Jews are markedly free from alcoholism. The tranquilising effects of Jewish family life, the joyous tone and complete rest of the Sabbath and other festivals, the unworrying character of the Jewish religion, are all important in the difficult art of keeping alive. The greater care taken of Jewish women, who more rarely take to manual labour, aids also in producing good results in the tables of mortality. I attribute much importance, too, to the strict regulation of the connubial relations current among Jews.²

I am unable to attribute much beneficial influences to the Jewish dietary laws, though the matter requires careful and unbiassed examination. These may be divided into four divisions, developed in chronological sequence—(1) the Biblical distinction of clean and unclean (Lev. xi); (2) the Talmudic method of cutting the animal's throat (*Shechita*) for the purpose of removing the blood; (3) *Bedika*, or examination of the chief organs to see if there are any lesions, developed after Talmudic times; (4) *Melicha*, or putting the flesh into salt and water to remove the blood; the origin of this is uncertain, nor is it clearly mentioned in the Talmud. It may have some connection with the practice of using salt with sacrifices (Lev. ii, 13). (1) The diet prescribed by the Bible, as by all Oriental legislation (Manu, Zoroaster), was doubtless due to a rough induction from popular experience. Apart from a few anomalies,³ it coincides in the main with the dietary of all civilised peoples with whom the ruminants, being the chief domestic animals,

¹ The indefatigable Korösi has given from Schimmer statistics showing that while 37 per cent. of Catholics (over 14 in Buda Pesth) followed certain trades of high mortality, and Protestants about 33 per cent., Jews had only 22 per cent. in these industries ("Pest in 1870," p. 45).

² Query: may this custom of separation (Lev. xv, 19) have any connection with Jewish proficiency in music, which in its origin seems to be also regulated sexual emotion? (cf. Darwin, "Descent," p. 573, and Gurney, "Power of Sound," chap. vi, pp. 116-121).

³ It is possible that some of these anomalies may be explained as survivals of totem worship derived by the ancient Hebrews from the Canaanites, or existing among themselves. Even in Ezekiel's time the Jews worshipped "every form of creeping thing and abominable beasts" (Ezek. viii, 10), and it has been contended that they worshipped totems, and no member of a totem clan will eat the totem animal. When, therefore, we find in the same passage Jaazaniah ben Shaphan (*i.e.*, son of the Coney or Rock-badger) in the same passage (verse 11) officiating at these totem-rites, totemism is given as the reason why the coney was included among the taboo'd food of the Israelites (Lev. xi, 5). On the whole subject cf. Prof. Robertson Smith, "Journal of Philology," 1880.

form the staple diet. The chief exception is, as is well known, the use of pork. This has been found to be injurious in hot climates, but in northern latitudes the chief danger has been found to be from trichinosis. So far as this affects vitality, Jews are undoubtedly free from this source of danger, but it scarcely seems to be prevalent enough to affect the death rate. (2) *Shechita* seems to have been originally confined to animals intended for sacrifice on the principle that "the blood is the life," and that this must be entirely spilt. It was afterwards extended to secular food, and it is nowadays contended that the removal of the blood is a safeguard against waste-products contained in it. Whatever advantages this gives must also be enjoyed by Mohammedans, who have borrowed it, as well as the Biblical distinction between clean and unclean, from the Jews. As a matter of fact, it does not remove all the blood, since Jewish practice requires a further process, insertion in salt and water (*Melicha*), to ensure this. (3) The *Bedika*, or examination of the internal organs, seems based on a correct principle,¹ but it has never been ascertained how far this is carried out in practice; it certainly does not ensure immunity from tubercle, as we shall shortly see. (4) About this it is sufficient to say that it does not effect its purpose. The originators of these practices, I may add, did not claim any medical validity for them, carefully distinguishing cases where food should not be eaten for medical, as opposed to religious, reasons. Some Jewish writers have even declared the flesh of the swine to be highly nutritious (*cf.* Kalisch on "Leviticus," II, p. 82).

These practices certainly do not secure *immunity from any special diseases*, as has been claimed for them in recent years, especially as regards cholera and phthisis. We now know that the Jews fell victims to the Black Death as much as their neighbours (Hœniger, "Der Schwarze Tod in Deutschland," 1881). As regards cholera, the only favourable result I can find is a strong tradition that Jews suffered less from it when it visited England in 1834, and last year at Marseilles their death rate from it was only 2 per 1,000, against 5 of the general population ("Vessillo Israel," September, 1884). On the other hand, I find in 1873 the mortality from cholera in Hungary greatest where there were most Jews, *e.g.*, 63 per 1,000 in Drohobycz, where half the inhabitants are Jews ("Statist. Monatsft," 1875, p. 136). In Smyrna, 1848, mortality from this pest carried off 1 in 26 among Jews, 1 in 40 among Moham-

¹ It is scarcely likely, however, that the Rabbins were in any sense anticipators of Koch and Pasteur, for they considered the function of the lungs to be to absorb the liquids of the body. See Talm. Bab., Beracoth 60 *a*, a passage which shows them to be by no means in advance of Hippocrates and Galen.

medans, $\frac{1}{73}$ Greeks, $\frac{1}{80}$ Catholics, $\frac{1}{200}$ Armenians (Burguière's "Etudes sur la Cholera à Smyrne," Paris, 1849, in A. Hirsch "Hist.-Geog. Pathologie," 1st edit., I, 129); and Bonnafort noticed the same for Algiers (*ibid.*), and Lombroso for Verona (Legoyt, "Immunités," p. 65). The alleged immunity from tubercular disease disappears in the same way on reference to definite results.¹ In Verona, 1855-64, Lombroso found among 272 Jewish deaths 6 per cent. from phthisis, against 7 per cent. among Catholics, and in an Hungarian district Glatte found this disease (*Lungentuberculose*) causing 14·4 per cent. of 473 Jewish deaths, against 16·9 Magyars, 16·4 Slovaks, and 19·5 Servians, but against only 13·5 of German deaths,² (Casper "Vierteljahrschft.," XXV, p. 48). These are the only favourable statistics, and by no means exceptionally so. Here in London, of 1,215 deaths attended by the medical officer of the Jewish Board of Guardians 1862-71, I have found that no less than 159 were due to tubercular disease, 13·1, against 11·3 for the Whitechapel district for the same period (Registrar-General's Report, XXXV, Suppt., p. 37). I find phthisis especially prevalent among Jews in Egypt according to Pruner, in Algeria according to Haspel, Bertheraud, and Pietra Santa (Hirsch, II, 95), and in South Russia according to Tchubinsky ("Globus," 1880, p. 377). Strong confirmatory evidence of the last statement may be seen in the fact that among the Russo-Jewish recruits of 1877-8 no less than 4 per cent. were dismissed for phthisis (a disease that cannot be "malingered"), against only 1·3 of the Polish recruits (Goldstein in "Revue d'Anthrop.," 1884, p. 470). We cannot therefore, in the face of these facts, claim any immunity from phthisis for Jews. No claim has been made for freedom from zymotic diseases; such immunity would be but a doubtful boon, as it would only leave freer field for the demon Bacillus to batten on, and the same might be said of the alleged immunity from phthisis. Syphilis seems to be less prevalent among Jews;³ but this may be due to moral causes,

¹ On this see Dr. H. Behrend, "The Communicability of Diseases of Animals to Man" (*Jewish Chronicle* Office). Unfortunately, Dr. Behrend has undertaken to show why the practice of *Bedika* should produce immunity from phthisis before ascertaining whether the immunity exists. And certainly he proves too much in the pamphlet referred to when he points out that 80 per cent. of animals slaughtered are infected with tuberculous disease. For only about 42 per cent. are rejected by the Jewish butchers, many of them merely for faults in the mode of slaughter.

² On the other hand, Jews had 4·7 of deaths from tubercular cerebral inflammation, against 2·2 Serbs and Slovaks, 2·6 Magyars, and 1·5 Germans.

³ Dr. A. Cohen, late Senior House Surgeon of the Metropolitan Free Hospital, has kindly given me the following details of the venereal cases coming under his notice during hospital practice in 1882-3. The numbers are those of all the venereal cases; the percentages in the first two rubrics, those of syphilitic cases;

and in so far as it is the result of circumcision¹ it is clearly not racial. The smaller proportion of congenital cases follows from this, and is thus only secondarily racial.

But if we cannot claim for Jews any racial immunity from special disease, neither can it be asserted that they are liable as a race to any, such as hæmorrhoids and diabetes. So far as these are prevalent among Jews they are due to sedentary habits. Even the most widely spread of Jewish diseases, insanity, blindness, and deafmutism, can be traced in part to their life in towns, their mental activity, and exciting occupations. With regard to deafmutism, I am inclined to lay some weight on an explanation which is nowadays thought to be exploded, viz., the influence of consanguineous marriages (*cf.* "Studies," p. 8, and *supra*, p. 28). Thus on examining some 28 families of children at the Jews' Deaf and Dumb Home, Walmer Road, I find that families where the parents are unconnected have 1·2 mutes per family, those where the parents are second cousins 1·5, and where the parents are first cousins there is an average of 3 mutes per family. The numbers are too small to enable us to draw definite results, but they suggest the need of further inquiry into this point.

Thus throughout our review of Jewish biostatistics we have failed to find any phenomenon which was uniformly present in all Jews that could not be referred to social causes. No doubt there is reciprocal influence between nurture and nature, and the Jewish organism may show some traces of the beneficial influence of Jewish training, as it certainly shows traces of the

the complementary ones would give those of gonorrhœa. The percentage relating to children are those of congenital syphilis observed in the number of children examined.

	Men.		Women.		Children.	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
Jews	122	17·8	10	20·0	153	3·3
Others	539	62·0	192	62·6	367	15·8

The number of Jewesses affected altogether was too small to afford trustworthy results. The proportion of Christian to Jewish patients was about three to one, the hospital being in the centre of the Jewish quarter of London.

¹ No investigation of the effects of this very widely spread custom (*cf.* Andree, "Arch. f. Anthr.," xiii, pp. 53-78; Ploss, "Das Kind," I, pp. 342-372) on venereal diseases has been made. It certainly does not produce immunity from gonorrhœa, which is mentioned both by Bible (Lev. xv, 2) and Talmud (Bergel, "Medizin des Talmuds," p. 40). On the possibility of an Egyptian origin of circumcision see Welcker in "Archiv. f. Anthrop.," x, p. 123. The phallus examined was of the fifteenth century B.C.

ill-effects of the environment in the bodily measurements to which we shall soon turn. But these influences are, in the first instance, social, not racial, and *cannot therefore be adduced to show common origin*. If we may restrict the word "Jewish" to properties due to the origin of Jews, and "Judaic" to whatever is due to their religion or customs, we may say that their biostatics is Judaic, not Jewish. To revert to our original illustration, if the Johns and Maries whom we imagined cooped up in ghetti had married as early, treated their children as tenderly, if the Johns had nurtured the Maries as well, if they had had the same pleasing family life and care of poor by rich, as Jews, they would have developed a Johannine biostatics largely resembling the Jewish. But these Johannine qualities would not be due to common origin, and would therefore be what I have termed "secondarily racial," and so *it may be* with Jewish qualities. So far as Jews enjoy certain vital advantages over their neighbours these depend on the simple antique virtues and customs of the Jews and Jewesses of past and present. These advantages will persist as long as the virtues remain, and disappear, as in some respects they are disappearing,¹ when the bonds of religion and tradition are relaxed.

We turn then in our search for purely racial characteristics of Jews to the measurements of their outward qualities, to their

II.—*Anthropometry.*

It might seem impossible that we should be disturbed here by having to consider any social factors. Yet, as regards two important sections of anthropometry—height and girth—social considerations have great weight, and, indeed, it would not be impossible to show their influence on colour-blindness, on the shape of the skull, which alters with increased mental activity, and perhaps even on the colour of the hair and eyes, which are not, in the long run, independent of quality and quantity of nutrition. But, on the whole, we may neglect these disturbing causes and take the following measurements as distinctive of the Jewish race at the present day, leaving for later consideration the question how far they indicate purity of race.

Height and Girth.—Jews are nowadays the shortest and narrowest of Europeans (excepting, perhaps, Magyars as regards the former), as the following sets of measurements will show:—

¹ The rate of illegitimacy and of suicides has been rising while the death rate is rising relatively to the surrounding populations, and the excess of male births is falling.

No.	Country.	Height	Span.	Girth.	Authority.
6592	Poland ..	161·2	..	80·1	Snigerew, "Revue d'Anthrop.," 1884, p. 470.
4372	„ ..	161·1	..	..	Uke, in Andree, "Volkskunde," p. 32.
826	Galicia ..	162·3	..	79·4	Majer and Kopernicki, "Charak, Fizyck, Galic," pp. 37 and 59.
810	Hungary	163·3	..	..	Scheiber, "Arch. f. Anthrop.," xiii.
130	England	170·8	..	89·5	Jacobs. ¹
100	Russia ..	162·7	168·1	84·2	Blechmann, "Anthropologie."
72	Various ..	163·2	..	84·6	Weisbach, "Körpermess."
20	Russia ..	163·7	170·7	..	Schulz, from Blechmann.

In the British Association Report for 1883 there is a list of heights of eighty-five different races, among which English Jews come thirteenth with 169·2 cm., and Polish Jews, according to Majer and Kopernicki, as low down as seventieth. Again, in a list of 122 racial heights by Weisbach ("Novara Expedition," pp. 216-217), Jews come seventy-sixth with Schulz's measurement, and would be much lower down with 162·1 cm., the mean of the above 12,922 measurements.

I may mention that the Jews measured for the British Association were of the higher social grades, and their superiority over the other Jews is undoubtedly the result of better nurture. The smaller height of Jews may thus be partly due to their residence in cities ("Brit. Assoc. Report," 1883, p. 284); tailors are also the smallest of men, and a much larger proportion of Jews are tailors. Goldstein has determined from Snigerew's measurements that Russian Jews have a smaller chest-girth, both absolutely and relatively, than other Russians, and he therefore credits them with a less "index of vitality." ("Revue d'Anthropologie," 1884, p. 481.) Other bodily measurements have been too sporadic for record, being limited to 19 examined by Weisbach, 20 by Schulz, and 100 by Blechmann.

Craniometry.—The few results reached in this branch of anthropometry seem to show that Jews are predominantly brachycephalic, and are not physically long-headed. Only thirty-four skull measurements are given by Stieda ("Arch. f. Anthrop.," xiv, 68) from Pruner-Bey, Welcker, Davis, Weisbach, and Dusseau: these give an average index of 77·3. To these I would add fifteen given by Lenhossék ("Cranioscopia," p. 167), with an index of 80·5, and five of Italian Jews, which I calculate

¹ From the measurements made for the British Association by Dr. M. Davis, who kindly lent me the results.

from Legoyt ("Immunités," p. 66) to have the same index. All the fifty-four skulls would therefore give a mean index of 78·5, more meso-cephalic than otherwise. But the larger number of measurements on the living subject give results as follows:—

No.	Index.	Dolicho-	Meso-	Brachycephalic.	Observer.
67	82·2	19·4	26·9	53·7	Dybrowski.
100	83·2	3·0	11·0	86·0	Blechmann.
313	83·5	4·8	10·9	84·3	Kopernicki.
380	83·4	8·1	16·6	75·3	Average.

With the larger numbers the brachycephalic character of the Jewish head seems to come out very distinctly. It is to be observed that Majer and Kopernicki considered that the ooidal head went with blonde hair, the brachycephalic with dark; but the number of long heads examined by them was small (fifteen) and Blechmann found one of his dolichocephalic subjects with dark hair. He also asserts, without a particle of evidence, so far as I can see, that Sephardic Jews are dolichocephalic. Dr. Beddoe, indeed, states that Ashkenazim have mostly "ooidal" heads, but the above statistics only show how untrustworthy mere impressions are, even when those of a trained observer.

Hair, Eyes, and Complexion.—Here we reach somewhat more definite results, based upon nearly 120,000 measurements I have collected in the table on the following page.

From these figures we see that though Jews are darker both in eyes and in hair than any of the other nationalities, they have about 21 per cent. blue-eyed and about 29 per cent. blonde-haired, and have thrice as many red-haired individuals as either Poles, Russians, or Austrians, and half as many again as Germans. It may be remarked that anthropologists are inclined to consider dark-haired races better fitted for the struggle for existence (F. Galton, "Record," p. 8; Schimmer, "Erhebungen," p. xxiv). The significance of these results as regards the question of purity of race will concern us later. Meanwhile I would supplement the above list by one compiled by me from Dr. Beddoe's results in his paper "On the Physical Characteristics of the Jewish Race" (*Ethnol. Trans.*, 1869).

These were the first published on the subject, and differ slightly in arrangement from the above, which mostly follow Virchow's epoch-making investigations into this subject. Dr. Beddoe examined 665 individuals in different places, and by taking the Jews of Turkey, Rome, and the Sephardic congregation

Place, Number, and Authority.	Race.	Eyes.			Hair.				Skin.	
		Blue.	Grey.	Brown.	Blonde.	Brown.	Black.	Red.	White.	
I. <i>Austria</i> (59,808 Jews, Schimmer, "Erhebungen," 1885)	{ Jews .. [Austrians	23.5	30.6	45.9	27.0	55.4	16.9	0.6	65.4	
		34.3	33.4	32.3	44.9	49.2	5.6	0.2	82.3	
II. <i>Prussia</i> (c. 50,000, Virchow, "Zeit. f. Ethn.," 1876, p. 17) ¹	{ Jews .. [Prussians..	18.7	28.8	53.5	32.4	55.5	10.1	0.5	77.7	
		43.0	32.7	24.3	72.2	26.1	1.2	0.3	98.5	
III. <i>Bavaria</i> (7,054, Mayr, "Zeit. Bay. Stat.," 1875)	{ Jews .. [Bavarians	20	31	49	30	50	20	..	70	
		29	37	34	54	41	5	..	85	
IV. <i>Buda Pesth</i> (3,141, Korösi, "Ann. de Demog.," I, p. 137)	{ Jews .. [Hungarians [Germans..	18.3	24.2	57.5	23.7	57.0	19.3	..	67.3	
		29.0	25.9	45.1	50.7	45.4	3.7	..	77.9	
		29.3	30.6	40.1	55.4	38.9	5.7	..	78.4	
V. <i>Württemberg</i> (1,995 Frass, "Centralbl. Anthropol.," 1876, No. 12)	{ Jews .. [Württem.	20	28	52	31.5	57.0	10.6	0.9	..	
		32	33	35	61.8	36.0	1.6	0.6	..	
VI. <i>Galicia</i> (826, Mäjer and Kopernicki, <i>loc. cit.</i> , pp. 88, 180) ²	{ Jews .. [Poles .. [Ruthenians	23.0	24.1	52.9	23.2	53.7	13.1	4.5	66.4	
		34.0	46.9	29.1	45.0	49.5	5.5	1.2	39.9	
		31.5	19.6	33.7	31.9	54.2	13.9	1.4	59.9	

¹ Virchow does not give number of Jewish children, but as there were 4,127,766 in all, and Jews are 1.3 per cent. in Prussia and have more children, they cannot have been much less than 50,000.

² Adding blue to green and chestnut to brown to make the results uniform.

These results must be taken with the restriction that, as the Anthropometric Committee of the British Association point out (Report, 1883), the hair and eyes of schoolboys' grow darker as they grow older.

of London as Sephardim, I am enabled to give some data for distinguishing between Sephardim and Ashkenazim as follows:—

	Eyes.			Hair.				
	Light.	Neutral.	Dark.	Red.	Fair.	Brown.	Dark.	Black.
290 Seph.	20	12	68	3·5	3·5	15·7	40·0	37·3
375 Ashk.	27	14	59	1·1	2·6	17·0	45·6	32·7

The differences are not very striking, with one remarkable exception: Sephardim have three times as many red-haired as Ashkenazim.

Colour-blindness may be taken here, though perhaps belonging to morbidity. The following table exhibits the chief results hitherto obtained, which are practically decisive of Jewish inferiority in this respect, due doubtless to the greater poverty of Jews and their long confinement in towns:—

No.	Place.	Jews.	Others.	Authority.
814	Breslau ..	4·1	2·1	Cohn, "Centblt. Augenkunde," 1873, p. 97.
949	London (boys)	4·9	3·5	"Trans. Ophth. Soc.," I, p. 198.
730	" (girls)	3·1	0·4	<i>Ibid.</i>
500	Frankfort ..	1·8	2·9	Carl, "Untersuchungen," 1881.
500	Italy (boys) ..	2·9	2·7	Ottolenghi, "Gaz. Cliniche," 1883.
420	" (girls) ..	0·0	..	<i>Id.</i> , "Vessillo Israel," Sept., 1884.

Ottolenghi, from whom I take Cohn's and Carl's results, observed that three out of his thirteen cases were cousins, two of whom had a maternal grandmother also colour-blind. The Ophthalmological Society's results were obtained from the poorly nurtured children of the Jews' Free Schools, Bell Lane and Greek Street.¹

Nose.—This feature is the one usually regarded as distinctive of the Jew, and is also considered anthropologically important (Topinard, "Anthropology," p. 358). I therefore give the few data I can gather as to its length and shape. Weisbach's nineteen Jews vied with the Patagonians in possessing the longest nose (71 mm.) of all the nineteen races examined by him (Andree, "Volkskunde," pp. 32, 33), while they had at the same time the narrowest noses (34 mm.). Blechmann's century of Jews, on the other hand, had an average length of 51·9 mm., and breadth

¹ Query: may the colour-blindness of Jewish girls account to any extent for their choice of primary colours for dresses?

35.9, giving a nasal index of 69.6 ("Anthropologie," p. 33). As regards shape, his results are—2 short, 10 broad, 2 *retroussé*, 4 flat, and 84 straight, while Majer and Kopernicki give the following table (p. 187):—

	Poles.	Ruthenians.	Jews (742 in number).
Curved-aquiline ..	6.4	6.1	30.9
Straight	67.4	68.1	59.6
Flat	7.5	11.2	2.9
<i>Retroussé</i>	18.7	14.6	6.6

But that one saw it "in print," most persons would doubt the possibility of meeting Jews with noses "tiptilted like a lily."¹

Lips are another characteristic feature of Jews, but the only measurements I know of are those of Blechmann, who gives 54 thin, 31 moderately thick, and 17 thick ("Anthrop.," *loc. cit.*), a result rather opposed to one's preconceived notions about the thick lips of Jews.

Expression.—Turning from the separate features of the Jewish face to that combination of them which we term expression, it might seem impossible to give anything more than subjective impressions. Thanks, however, to Mr. Galton, science has been enabled to call in the aid of photography to obtain those averages which no measurements can supply. Some two years ago I applied to him to know whether he would assist me in obtaining composites of Jewish faces, and to this he was kind enough to consent. A number of photographs of Jewish boys were taken at the Jews' Free School, through the kindness of Mr. Angel, the well-known head-master of that admirable institution, and Mr. Galton was good enough to compound them in the way familiar to all here (*vide* F. Galton, "Inquiries into Human Faculty," App. B, III). Plates I and II contain a number of the results, together with the individual components from which they were compounded.² It will be observed that in the composite (C) containing the largest number of components (thirteen) the face has distinctly what is termed a Jewish expression, though it is full-faced. It follows that the peculiar expression known as Jewish cannot be due to the droop of the nose alone. The full lips, the heavy eyelids, and large irides have much to do with it. So far as the nose is concerned it is the flexibility of the *alæ*, or wings

¹ Harim (1 Chron. xxiv, 8) and Harumaph (Neh. iii, 10) were flat-nosed if their names do not belie them. Roven Salomo, a Jew of 1347, figured in "Revue d. Études Juives," No. 12, has a distinctly concave nose.

² See explanation at end of paper, p. 53.

of the nostrils, that are distinctive rather than its curvature.¹ I may add that an artist friend has pointed out to me that a figure 6 with a long tail gives the best caricature outline of the Jewish nose, and here again the importance of the *alæ* is manifest. In the profile co-composite (G) containing ten Jewish noses rolled into one, it will be noticed that the outline is blurred, *i.e.*, not typical, while the accentuation of the *alæ* is clearly marked, and lips and chin are tolerably distinctive. The actual expression in the various composites varies to some degree, and it is a doubtful point whether the peculiar intensity of the Jewish gaze (well exhibited in composite D) is not due to long residence in ghetti and the accompanying social isolation. I fancy at least that it disappears to a large extent in Jews who pass very much of their life among Gentiles. At the same time something like it may be traced throughout the history of Art, and I may refer to one of the earliest representations of Jews in Art, the Assyrian *bas relief* of the captive Jews of Lachish (B.C. 701) being taken before Sennacherib (see Sayce, "Fresh Light," p. 145). The subject is undoubted and well known, and the persistency of the Jewish type for the last 2,600 years is conclusively proved by it. But a careful examination shows that the Assyrian artist gives the Jewish captives very much the same type of face as their captors, the chief difference consisting in the fact that the Jews have the beard cut, the usual sign of captivity. The female slaves behind Sennacherib's throne might have been taken from the synagogue galleries of to-day, and yet we have no warrant that they are Jewesses. The *relief* then shows not only the persistency of the Jewish type, but its practical identity with the ordinary Semitic type of those days. I possess a photograph which shows the same at the present day: I bought it thinking it to be a collection of Eastern Jews, and found out afterwards that it was a *séance* of Syriac Mohammedans.²

III.—*Historical Data.*

And this leads me to the main subject of this paper—the question of the purity of the Jewish race. M. Renan, who re-

¹ Query: may this aid histrionic expression? George Eliot gives the Alcharisi, "a play of the brow and nostril which made a tacit language" ("Dan. Deronda," p. 479).

² Before leaving the anthropometric data I should have referred to the earlier age at which menstruation appears among Jewesses. Raciborski, "Traité de la Menstruation," 1869, p. 630, puts it at 14 years 3 months and 25 days, which would place them earliest in Topinard's scale ("Anthrop.," p. 366), except for Southern Asia. Cf., too, Ploss, "Das Weib," i, 148. The matter requires further investigation.

cently expressed his regret that he did not give his youth to science, as he would have certainly anticipated Darwin, has made his first incursion into scientific fields in an examination of this question ("Le Judaïsme comme race et comme religion," Paris, 1883). His results are mainly against the racial purity of the Jews, and in this conclusion he has been followed by M. Isidore Loeb in an excellent article, *Juifs*, in Saint Martin's "Dictionnaire de Géographie," and we have just heard how Dr. Neubauer upholds the opinion of his illustrious friend. Notwithstanding the authority which must attach to such names when dealing with a matter mainly historical, I hope to show that the last word has not been said on the subject, and that anthropological science in particular has certain considerations to suggest which must give us pause before accepting the conclusions at which these authorities have arrived. The whole question is very complicated, and I will attempt to give the strongest arguments on both sides, beginning with those unfavourable to the purity.

(1) *Proselytism*.—The question of the former intermarriage of Jews and Gentiles resolves itself into that of proselytism, since Jewish law does not recognise *matrimonium* with a person of another belief.¹ But in the early days of Israel this was not the case. After the conquest of Canaan, the Israelites entered into frequent connubial relations with the conquered. We may perhaps see a reference to the beginning of this process² in the curious tradition about the Judge (or Baron) Ibzan of Bethlehem who, we learn (Jud. xii, 9), "had thirty sons and thirty daughters: the latter he sent abroad and took in thirty daughters from abroad for his sons." But such intermarriage with the daughters of Canaan are of little significance from the anthropological point of view.³ For there was no such diversity of type among the Semites as among the Aryans. The Semitic languages differ from one another only as the Romance tongues do, and do not show such wide differences as those between Russian and Welsh. We have already seen that Jews and Assyrians of the eighth century B.C. were of practically the same type. The distinction between Jews and other Semites was religious, not racial. The strenuous prohibition of Ezra against marriage with strange women was directed against idolatry rather than exogamy. For even before this date we

¹ *Vide* Frankel, "Grundlinien d. mos. Eherechts," p. 22, and Ritter, "Philo," p. 71. Philo makes the prohibition even stronger, taking Deut. vii, 3, as binding with regard to all nations.

² Query: was this a case of exogamy with other Israelite totem-clans? (*cf. supra*, p. 29, note.)

³ Jewish tradition recognised Ammonites, Moabites, and Idumæans to be of same race (*cf.* Wellhausen, art. *Israel*, "Ency. Brit.," "History," p. 429).

find traces of proselytism in the Bible.¹ The second Isaiah (lvi, 6) speaks of “the sons of the stranger who join themselves under the Lord.” The late book of Esther also refers to proselytes (viii, 17; ix, 27), while three of the later Psalms (Ps. cxvii, cxviii, cxxxv), possibly of the second century B.C., divide Jews into three classes—“the House of Israel,” “the House of Aaron,” and “those who fear the Lord.” The last became the technical expression for proselytes among Hellenistic Jews (Acts, *passim*). So numerous had these proselytes become that they were classified according to the motives which led to their conversion. There were Proselytes of the Lion—from fear; Proselytes of the King’s table—from ambition; Proselytes for a wife; and there was a grand division made between Proselytes of the Gate, who did not observe the most stringent of the Mosaic regulations, and Proselytes of Righteousness, who were even as Jews in all that concerned the Mosaic precepts. Now it is only with the latter class that we are concerned, since only these had the full *jus connubii* with persons of Jewish race and religion. It is therefore of critical importance to know whether any of the many proselytes mentioned by Josephus, the New Testament, and the Talmud were proselytes of the Gate or of Righteousness, the latter being the only ones that affect the main question. The Jews of Antioch only made the many inhabitants proselytes “after a fashion” (τρόπων τινί, “Wars,” VII, iii, 3), *i.e.*, they were only Proselytes of the Gate. I am surprised to find a scholar like M. Renan omitting this cardinal restriction, which tells dead against his position.² St. Paul, in his addresses to the congregations at Antioch (Acts xvii, 16, 26), Thessalonica (xvii, 4), Athens (*id.*, 17), carefully distinguishes Jews and proselytes. And in a significant passage (“Wars,” VI, ix, 3), the bearing of which has been overlooked by M. Renan and his followers, Josephus mentions that the foreigners who came to worship at Jerusalem

¹ For many of the following facts I am indebted to J. Bernays’ masterly essay, “Die Gottesfürchtigen bei Juvenal,” in the Mommsen presentation volume, and now reprinted in his “Gesam. Schrift.,” ii, 71–80 (*cf.* Mayor’s “Notes on Juvenal,” xiv, 99, *et seq.*).

² M. Renan translates *Ayant amené à leur culte un grand nombre d’Hellènes ils en firent une partie de leur communauté* (“Le Judaïsme, &c.,” p. 72). He should have added to the last clause some such phrase as *tant bien que mal*. Similarly in the translation of C. Apion ii, 39, M. Renan (p. 15) has not quite preserved the force of the Greek πολλά, which shows that the Greeks and barbarians referred to did not observe all the Jewish dietary laws, and were therefore not full proselytes. As a matter of fact they were not proselytes at all, nor does Josephus say they were. He is referring to the well-known fact that many other nations have customs similar to the Jews, *e.g.*, the Sabbath or dietary laws and with his usual boastfulness pretends that they learnt them from the Jewish law. Only the fact that M. Renan intended his discourse for a conversation (p. 1) can excuse these slips.

were not allowed to share the Passover meal, *i.e.*, were only proselytes of the Gate. When Josephus calls Nero's wife, Poppæa, a proselyte (*θεοσεβής*), this can only mean that she was interested in Jewish doctrines: it cannot imply any adherence to Jewish customs. It was to this very class of proselytes of the Gate that Paul appealed, and founded Christianity by granting full religious rights to them. The triumph of Christianity meant, therefore, that this rapidly growing class were drawn off from Judaism to the new sect before they had been fully incorporated with the older body. After the wars with the Romans Jewish propagandism would have but little scope, as, indeed, M. Renan allows. So that for the existence of full proselytes during this period we have only the evidence of Juvenal, Dio Cassius, and Tacitus, who might easily be struck by a few examples of what they considered a barbarous custom.¹ The last says that Jews never intermarried ("Hist." v. 5).

So soon as Christianity became the State religion, proselytism would become dangerous. Severe penalties were placed by the laws against intermarriage of Jew and Christian, which was placed on the same footing as adultery (390 A.D., "Cod. Theod.," LV, ii).² The Councils of the Church included similar injunctions as a matter of course, one set of canons following the preceding.³ The severity of the sentence is often enough to show how rarely the laws were transgressed. This, however, if any, was the time when any intermarriage could have taken place, owing to the kindly relations of Jews and Christians. Unfortunately, it is also the time (300 A.D.—800 A.D.) of which we know least about Jews. Before, however, we reach Charlemagne's epoch two instances of proselytism on a large scale occurred in the countries beyond civilisation, and these have naturally been emphasised by M. Renan and his followers. In South Russia the kingdom of the Cozars,⁴ situated midway between the Patriarchate of Constantinople and the Emirate of Bagdad, ingeniously evaded the necessity of acknowledging either of these powers by formally adopting Judaism, which both had to tolerate. The adhesion was scarcely more than

¹ See M. Derenbourg's temperate and judicious treatment of the question, "Essai," chap. xiv. With regard to converts at the Imperial courts (Graetz, "Die jüd. Proselyten," 1884), it is a great question whether for "Jewish" we ought not to read "Christian." I see an instance of this in Epict., "Disc.," II, ix.

² Constantine appointed the punishment of death against such marriages ("Cod. Theod.," xvi, 6).

³ Elvira (320), xvi; Chalcedonia (388), xv; Third Orleans (538); Maçon (581); Third Toledo (589), xiv; Fourth Toledo (633), lxiii. Basnage, "Histoire," ix, 409-414.

⁴ St. Martin, "Les Khazars," 1851. Harkavy, in "Russ. Revue," 1876. For Arabic and Hebrew sources, see Carmoly, "Itinéraires de Sainte Terre.," 1847.

formal, and there is little evidence of any great intermixture of pure Jews with these Cozars, except by the few learned Jews who taught them their creed.¹ These seem to have been of the Karaite sect, and we find still the headcentre of the Karaites in the Crimea, where the Cozars ultimately concentrated. All accounts represent the Karaites as perfectly un-Jewish in appearance, and I would venture to apply to them Napoleon's witticism, "*Grattez le Karaite et vous trouverez le Khazar.*"² The Cozars were crushed in the ninth century, while the Polish Jews, who are supposed to show signs of intermixture with Cozars, came into that kingdom from Germany long afterwards. Similarly, a somewhat earlier conversion of Arab tribes in Yemen has only left traces on contemporary Judaism in the Falashas, to whom Rohlfs also denies Jewish features ("Abessynien," 1884, p. 273). Karaites and Falashas, with the Daggatouns of the Sahara and the Beni-Israel of Bombay, are the only Jews of to-day who display alien blood, and these form only one per cent. of Israel, and never intermarry with Jews.

After the age of Charlemagne no great intermixture of Jews and Aryans can be discerned. As Europe became Christendom, the Church isolated the Jews more and more by cutting them off from the trade guilds, originally religious, and from all civil rights: they became the King's chattels in a literal sense. The mere fact of their being cooped up in ghetti would be enough to put a bar in the way of frequent intercourse, and it was the true insight of an artist that made Sir Walter Scott regard a marriage between Rebecca and Ivanhoe as rendered impossible by the circumstances of the Middle Ages.³

To sum up this short sketch of Jewish proselytism, this undoubtedly existed before the spread of Christianity, but only or mainly so far as Proselytes of the Gate were concerned, who could not marry with Jews, and these were soon intercepted by the Church, which afterwards took most stringent measures to prevent any relapse. I would add that the case is somewhat different as regards slaves, and it is possible that some infusion of Aryan blood came in through this means, but the amount

¹ There were only 4,000 Jewish Cozars in all (Fraehn, "De Chazaris," 1822, p. 13). But to the contrary effect see Masudi, "Meadows of Gold," p. 407. The letters interchanged between the Khan of the Cozars and R. Hisdai of Spain, serve to show the rare intercourse of the Cozars with the rest of the Jewish world.

² M. Renan makes much of a Karaite being named Toktamish. This might be explained by his being a Cozar. But Jews have always freely adopted local names (Zunz, "Namen der Juden"). Cf. Talm. Jer., Gittin i, 55 b.

³ Though the name *ghetto* is derived from the foundry at Venice, in which Jews were cooped up in 1510, the thing existed as early as 1090 at Salerno, if not earlier at Constantinople (Graetz, v, 37), or even in Rome and Alexandria.

would be necessarily small; and the children, according to Jewish law, followed the *status* of the mother.

The above estimate of Jewish proselytism is substantiated by all the evidence I can gather on the subject. Thus while of the 200 doctors of the Mishna up to 200 A.D., no less than eight¹ were of alien blood (though that Semitic), of the 1,500 doctors of the Gemara, from 200 to 600 A.D., I can only find one (Mari bar Rahel)² who seems to have been descended from a proselyte. This seems to indicate the dying out of proselytism after Christianity, though the change of scene from Palestine to Babylon may have also something to do with it. Rava and Nachman, two Babylonian Rabbis of the fourth century, in discussing a certain law, dismiss the case of a proselyte as it is so seldom (Gittin, 85 a). So, too, on looking through some eight hundred inscriptions, I found two female proselytes³ in the classical ones (114 in number), but not a single one on tombstones of later date.⁴ The colossal erudition of Wolfius ("Biblioth. Hebr.," II and IV) could only gather together forty-four names of proselytes during the Middle Ages, and with my utmost diligence I have only been able to add sixteen to these, five of whom died as martyrs for their new faith.⁵ As regards Moslem countries I cannot speak with such confidence. Moses de Couçy is said by Basnage to have rebuked the Jews of Spain for marrying Moorish women. But such intermarriage would only affect Sephardim, who form only 6 per cent. of the Jews of to-day, and would be for the most part with Semitic blood. The boasted tolerance of Islam⁶ only lasted down to 1040, and afterwards there was but little difference in the treatment Jews received under the Crescent and the Cross.

And even if history showed a greater infusion of Aryan blood than the above estimate would allow, the effect of this on Jewish characteristics would tend to be minimised by certain anthropological principles which have been completely overlooked by M. Renan and followers. I have already referred to the comparative infertility of mixed marriages (the Talmud

¹ Some of these were very distinguished, e.g. : Akiba, the Targumist Onkelos, R. Meir, Schemajah, and Abtalion; three others are mentioned by Derenbourg, p. 223 n. (Cf. Brüll, "Misnaelehrer von heidnischer Abkunft," in his "Jahrbuch," ii.)

² I owe this name to the erudition of my friend Mr. S. Schechter.

³ *Beruria*, re-named *Sara*, Orelli, No. 2522, and *Soteria*, who is termed *mater synagogæ*, *Id.* No. 2523, both at Rome. A third given by Bernays, ii, 80, was not a full proselyte ("metuenti").

⁴ At Venice (Berliner), Toledo (Zunz), Paris (Longperier), Amsterdam (Castro), and other places given by Wolf, Zunz, and others.

⁵ Four at Wissemburg, 1264 (Neubauer, "Rev. Etudes Juives," No. 7), and one at Augsburg the same year (Zunz, "Literaturgeschichte," p. 350).

⁶ One of Maimonides' responses is to a proselyte from Islam (Frankel, "Entwurf," p. 30).

says they only produce girls, Nidda 13 *b*, Jebam. 62 *a*), and I would now point out its consequences. Taking the most extreme case imaginable, let us suppose that as many as one-tenth of all Jews and Jewesses married outside the pale. Estimating the pure Jewish population to increase uniformly half as much again each generation of thirty years, I suppose the mixed marriage to result in only one surviving child, so that the next generation only replaces its Jewish parents. Then gradually raising the fertility as the offspring marry with Jews, but never making it equal to pure Jewish marriages, I find that in six generations, or two hundred years, the original ten per cent. has sunk to little over two.

And even this small percentage would show but little traces of its alien origin, owing to another anthropological principle to which I now proceed to call attention, I believe for the first time. On examining some cases of mixed marriages, I was struck by the uniformity with which the children resembled the Jewish side, and I was led to make special inquiry into the matter, with the following results:—Of 84 such marriages examined by me, 9 were sterile; of 35 I could obtain no definite results; 22 showed Jewish prepotency; 13 Gentile, and 5 mixed. Now when it is remembered that if mixed marriages occurred in the Middle Ages the offspring must have married again within the Jewish pale, it is hardly likely that the Gentile blood would persist throughout the ages, even if it were prepotent, and if the above rather rough results have any validity the prepotency is rather on the Jewish side, and at any rate there seems very little tendency to real intermixture (only in five families out of forty-nine).¹ Another fact pointing in the same direction is the interesting point that in families into which there has been an infusion of Jewish blood this tends to appear in a marked and intensely Jewish cast of features and expression. I know of four instances of this myself, and Mr. Galton tells me that a couple occur in the family records he has been collecting. Now as reversion is mostly towards the side of greater prepotency, this curious fact confirms our conclusion as to the superior prepotency of Jewish blood.

(2) But it will be asked, and has been asked, "How will you account for the wide divergences from the Jewish type of skull, nose, eyes, hair, &c., which are shown in the statistics on these points given above, and must indeed be a matter of common observation?" M. Renan has decided this point literally

¹ The chance of a child resembling any ancestor might perhaps be roughly expressed by the reciprocal of its figure on Mr. Galton's system, "Record," p. 3; "Nature," Sept. 6th, 1883. Thus the chance of my resembling my maternal great-grandfather is $\frac{1}{12}$. Cf., too, Galton, "Her. Gen.," p. 327 *n*.

ex cathedra: seated in his chair at the Bibliothèque Nationale, he has observed the Jewish *savants* who have applied for his aid, and concluded that there are several types of Jews which are absolutely irreducible to one another ("Le Judaïsme," &c., p. 25). But the question of types is a question of averages, and you cannot so easily decide upon the non-existence of a type by pointing to a few divergences from it. An organism is not a manufactured article turned out by machinery, but may modify itself and be modified by the environment, introducing a principle of variability which causes the type to develop. An organic type therefore exists not where there is no variation, but where the variations follow the law of error, and where the modulus of variation is tolerably constant. This is in the main the case with most of the anthropological measurements I have laid before the meeting, and it follows that the variations, though they may be due to intermixture, may also be merely normal divergences from the standard.

It seems hardest to accept this result with regard to red hair, which we have seen to be exceptionally prevalent among Jews. Yet, as a matter of fact, red hair seems to be only a natural complement to black, so that for anthropological purposes we might even term red "light black." The colour of the hair is determined by the presence and amount of two pigments: when the darker is absent from any physiological cause red hair is the consequence, just as when both are absent albinism appears (Topinard, "Elements d'Anthropologie," 1885, p. 323). Now just as albinos occur among all races, including negroes, so does red hair. Eusebius declared that Adam was rufous, not only from the etymology of the name, but because red-haired men occurred among all the races of mankind (Topinard, *loc. cit.*). That "erythrism" among Jews is not due to intermixture, but probably to defective nutrition, is shown in the first place by its occurring among Jews of Africa and the East. It has been observed in Algiers, Tunis, Bosnia, Constantinople, Smyrna, Syria, Persia, and Bokhara.¹ Secondly, from my analysis of Dr. Beddoe's results, it will be observed that red hair occurs among Sephardim to a greater extent than among Ashkenazim, and it has never been contended that the Sephardim have mixed much with any race markedly rufous.² And, thirdly, when it does occur among Ashkenazim of North Europe, it is found more among Jews than in

¹ Dr. Beddoe has paid particular attention to this point; see his paper previously cited, pp. 12-19 of the reprint and table at end. Andree, "Zur Volks.," p. 35, repeats most of this, but is mistaken in saying that rufous Jews have been observed at Cochin. I have seen somewhere that the red-haired Jews of Palestine claim to be Benjamites.

² A certain amount of erythrism was, however, introduced into Spain by the Goths (*cf.* Beddoe, *loc. cit.*, p. 24).

the indigenous population, whereas if it were due to intermixture we should expect to find the amount of erythrisms among Jews intermediate between that of the natives among whom they dwell and the supposed original black hair of the Semites. Indeed, but for the abundant presence of red hair among Scotchmen it might be more open to explain the origin of red hair among Europeans as due to an infusion of Jewish blood than to account for it among Jews by assuming intermixture with Aryans.

The argument from red hair being thus dismissed with costs, the existence of blue eyes among Jews in relatively large proportions need not be regarded as overwhelming proof of intermixture. As is well known, all eyes are blue at birth, *i.e.*, we see through to the back of the baby's iris, and if no pigment cells are deposited in the iris the eyes remain blue to the end of life (Topinard, *loc. cit.*). Thus blue eyes, as well as red hair, are a kind of minor albinism, and may result from defective nutrition or other physiological causes like red hair. That this is probably the real cause of its occurrence among Jews is confirmed by the fact that we find blue eyes among Asiatic as well as European Jews (*cf.* Beddoe, *loc. cit.*).

It may be convenient that I should here add what little evidence I have been able to collect as to the appearance of Jews in the past. It is a question whether Esau (Edom) was regarded as having red hair (Gen. xxv, 25), because that colour was frequent among the Idumæans. Dr. Beddoe suggests that red hair among Jews may have been due to intermixture with Idumæans after they became proselytes; but the existence of red hair among them, their proselytism,¹ and their intermarrying with Jews are all more or less conjectural. In the regulations about leprosy (Lev. xiii) it seems to be implied that the hair was black, or at any rate dark. The Shunamite says, "I am black [swarthy], . . . for the sun has browned me" (Cant. i, 5), but on the other hand speaks of the "raven locks" of her beloved (*ibid.*, v, 11). If we could trust to the etymologies of proper names the five persons bearing the names Harim and Harumaph in the Bible had flat noses. The first definite information I can find is contained in a saying of a Mishnic Rabbi, R. Ishmael (about 120 A.D.), who says (Neg. ii, 1), "The sons of Israel are like boxwood, neither black nor white, but between the two," *i.e.*, of olive complexion. Both Mishna and Gemara seem to use "black" (*shachar*, *vide* Buxtorf, *sub voce*, col. 2372) as synonymous both with "hair" and with "youth."² The

¹ Derenbourg ("Essai," p. 227) says that the proselytism of the Idumæans was more political than religious.

² It is to be remarked, however, that the chief passage (Pirke Aboth iii, 12) on which this identification is based is not of certain interpretation. See Taylor, p. 63, Geiger ("Nachg. Schr.," iv, p. 338), and Strack *in locum*.

Targum or Chaldaic paraphrase on 1 Sam. xvi, 12, makes David "red-haired" instead of "ruddy," and the mistranslation has passed into Luther's version. This shows at least that the Jews of the time when the Targum was written (about 600 A.D.) were not averse to regarding the typical Jewish king as rufous. The light hair given to the Christ in early Art,¹ the traditional red hair attributed to Judas Iscariot, as well as the golden locks of Mary Magdalene, require further investigation. Later on I find Jehuda Halevi (c. 1140 A.D.) speaking of the golden hair of his beloved,² a Spanish Jew, Roven Salomo, 1349 A.D., with light brown hair,³ and Rembrandt's Rabbi in the National Gallery has a red beard. All these indications serve to show that red hair at least is no late importation into Jewish anthropology.⁴ Evidence about blue eyes is more difficult to obtain, as it is still a doubtful point among scholars whether either Bible or Talmud has any word to express blue.

Altogether, then, the two chief arguments hitherto urged to prove intermixture—which may be roughly summarised as proselytism and red hair—cannot be said to be decisive, while there are other more positive arguments tending to show the comparative purity of the Jewish race, and to these I now turn.

I. The first and perhaps chief of these is the existence of a class of Jews who are not permitted by Jewish law to marry even full proselytes. These are the priests, or *Cohanim*, the Beni Aaron or sons of Aaron. We have already seen that at the time of the Maccabees, Jews were addressed in the Psalms under three appellatives—Israelites, Aaronites, and Proselytes. The sons of Aaron could only intermarry with the daughters of Aaron or of Israel. The discussion about the comparative purity of Babylon and the surrounding districts which gave rise to the saying, "Babylon is sound, Mesene dead, Media ill, and Elam on its last legs" (Kidd. 71 *a*), was probably concerned with the purity of Cohanite marriages, for which any perceptible amount of "paste" or intermixture was considered as objectionable.⁵ The

¹ See "Dict. Christ. Antiq.," art. "Christ, Early Representations of," and authorities there quoted.

² Geiger, "Divan," p. 123. The poet uses, I regret to observe, the same words as are used in the Bible to represent the discoloration of the hair on the leprous spot (Lev. xiii, 30).

³ Figured in "Rev. d. Et. Juives," No. 12.

⁴ It is worth while remarking that the Cozars, according to Ibn Foslan, had black hair (*cf.* Lagneau, "Denombrement," p. 49, note).

⁵ Upon the difficult question of *Issah*, or "paste," there are two papers in Graetz, "Monatsft.," one by Graetz himself, "Illegitime Mischehen in Judäa," 1879, pp. 481-508, and one by F. Rosenthal, "Ueber Issah," 1881, pp. 38-48, 713-723, 207-217. *Cf.*, too, Graetz "Das Königreich Mesene," pp. 31-33. I fancy that the custom of consanguineous marriages may be connected with the desire to preserve purity of descent; *cf.* R. Meir's recommendation (Kidd. 71 *a*, "Monats," 1879, p. 507), and Tobit, who marries of his own kindred (i, 9).

saying and similar ones cannot be pressed to prove any wide admixture, and only serve to show how carefully the purity of Cohanite marriages was preserved, and the notice taken of any deviations from endogamy. It will be of interest to ascertain the number of these Cohanim who are themselves pure, and must have set an example of exclusiveness to their fellow-Jews. In the return under Nehemiah, the four families of priests numbered 4,289, out of 49,942 (Neh. vii, 39–42, 66, 67). In two lists of martyrs killed at Nurnberg in the years 1298 and 1349, the Cohanim number 91 out of 1,300, almost exactly the same proportion as in Ezra's time, though one may expect to find the Cohanim more ready to suffer martyrdom than other Jews.¹ In Jewish ritual it is customary that the first "called up" to the reading of the Law should be a Cohen, and there are only five on ordinary days and eight on Sabbaths and festivals,² thus indicating that a large supply of Cohanim was regarded as usual. Among the two hundred inscriptions of the Venice "House of Life" or burial ground collected by Dr. Berliner ("Heb. Grab-schriften," 1881), there are thirteen Cohens (6·5 per cent.), though here again it is probable that a greater proportion of these would be honoured with tombstones. The descendants of such Cohanim live and flourish at the present day, but it is impossible to determine their number, as their civil surname may not be Cohen. Thus Dr. N. M. Adler, the present Chief Rabbi of England, is a Cohen, though it is not necessary for a Jew to be a Cohen in order to be a minister. In lists of 4,720 English Jews I found the Cohens to form 3 per cent., while in a Continental list of 4,600 they were but 2·3 (my "Studies," p. 4). The latter is probably somewhat misleading,³ as in a list of 335 Jewish celebrities in all European lands, culled from dictionaries of contemporary biography, the Cohens number eleven, or very nearly 4 per cent., while I know of at least five of the remainder who might call themselves Cohen. Altogether I am inclined to think that there are about 5 per cent. of Cohanim among Jews, and these cannot have had any direct mixture with the outer world.⁴

But though they may never marry a proselyte, they may

¹ I calculate these from the lists given by Dr. Neubauer, "Memorbuch de Mayence," *Revue*, No. 7, p. 10; and the Rev. W. Lowe, "Memorbuch of Nurnberg," 1880.

² This and the priestly benediction are the only two functions now performed by Cohanim; it would be interesting to learn the origin of the position of the fingers in the latter function, which are spread so as to leave a gap between the first and the last two.

³ Lippe's "Bibliog. Lexicon" contains a large proportion of names of ministers, and small congregations object to a Cohen as a minister, as he must not approach a dead body (Lev. xxi, 1).

⁴ There are said to be less Cohanim among Sephardim.

marry the daughters of proselytes, and thus introduce alien blood. R. Jose was for allowing them even to marry proselytes, while R. Jehuda declared against their marriage with any child of a proselyte: the law, however, went with the opinion of R. Eleasar ben Jacob in the early part of the second century, who permitted marriage between a priest and a woman one of whose parents had been a proselyte (Mishna, Kidd. iv, 7). Owing to this decision, later authorities doubted whether there were any true Cohanim, *e.g.*, Isaac ben Shesheth, of the thirteenth century, while R. Samuel b. Modena, of the sixteenth, even allowed a Cohen to transgress the Law on this ground (Löw, "Lebensalter," p. 114, and notes p. 391). There is also an amusing tradition told in the Talmud, aspersing the purity of Cohanite descent. It is said of Pashur ben Immer (in whom two of the four Cohanite branches appear to be conjoined), that he had four hundred female slaves, and that if you find an impudent Cohen nowadays, he is certainly descended from Pashur ben Immer (Kidd. 70, *b.*)¹ I may add that even at the present day Cohens have the reputation of being hotter-tempered than other Jews. All these indications may modify any claim for absolute purity among Cohanim; and the fact that they do not differ perceptibly from other Jews may serve as an argument either for the general purity of the race, or, on the other hand, for the mixed origin of the Cohens, which would be very difficult to prove to any large extent.

II. Another point on which I would lay stress, if the suggestion I make is borne out by facts, is with regard to the comparatively small variation of type among *Jewesses* as compared with Jews. I seem to observe that *Jewesses* have more uniformly what we term the Jewish face than Jews have. It is a universal law of animal life that, owing to sexual selection and other causes, the males of a species vary considerably more than the females. And, conversely, where we find the females varying less than the males we may conjecture that we have a case of true species. Even more in *Jewesses* than in Jews, we can see that cast of face in which the racial so dominates the individual that whereas of other countenances we say, "That is a kind, a sad, a cruel, or a tender face," of this our first thought is, "That is a Jewish face." That the difference should be almost innately perceived by Jews who have for nearly two thousand years associated all that is kindly with this type would be natural. But the difference is almost as readily discerned by Gentiles, and even the negroes of Surinam, when they see a European and a Jew approach, do not say, "Here are two whites," but "Here is a white and a Jew" (Duttenhofer ap. Andree, "Volks.," p. 38).

¹ I owe this reference to the kindness of my friend Mr. Schechter.

I lay stress upon this point of expression because it is after all the chief external trait that can be fixed upon as typically Jewish. We have the evidence of the monuments for its persistence through the ages, and the scientific evidence of its typical character in the "composites" produced by Mr. Galton's process, and given with this paper. Mr. Galton agrees with me that he has been more successful in producing definite types with Jewish boys than with any other of his subjects (*cf.* the plate prefixed to his "Inquiries into Human Faculty"). It must be allowed, however, that there is great force in the argument which would attribute the Jewish expression to the influence of isolation, so that we might define it as *Semitic features with ghetto expression*. But against this reasoning may be urged the early appearance of the Jewish type in the Assyrian monuments, and further, the fact of its appearing among the results of mixed marriages, where it must be racial. I have already pointed out what I consider to be the part of the Jewish expression due to isolation—the intensity of the gaze shown so well in the adult "composite" D, a fitting expression of a severe struggle for existence.

The earlier period at which "the custom of woman" (Gen. xxxi, 35) appears among Jewesses (*supra*, p. 39, note) is another trait which, if substantiated by wider induction, must be regarded as distinctly racial. If Darwin's explanation of its origin ("Descent," 1st edit., I, p. 212) be correct, it must have preserved its periodicity for an incalculable time, and it may be surmised that any other temporal relation, such as the age of its appearance, would be equally persistent. If it appears among Jewesses of St. Petersburg at the same early age as among Southern Asiatics, the Eastern origin of the former may be considered as well established.¹ But I fear that I am here falling into the same error that has misled so many inquirers into Jewish biostatics: I may be trusting to statistics derived from a few hundred subjects to decide on a question affecting several millions. I will therefore content myself with pointing out the importance of the subject and the need of further investigations.²

III. And, finally, in dealing with the question of the racial purity of Jews, as in the main we must deal with it, historically,

¹ On the other hand, the Talmud fixes the age of puberty for girls at the beginning of the thirteenth year, *i.e.*, when twelve years old (Nidda 46 a; Löw, "Lebensalter," p. 142); this seems earlier than at present.

² There is probably something distinctive about the gait of Jewish women. Here in England, at any rate, most Jewesses can be distinguished at once by their swaying walk, due to their walking from the hip, not from the knee. I am uncertain whether this distinction is merely a Continental habit imported into England, or whether it can be traced back to the times of Isaiah (iii, 16).

one has to take into account the fact that it takes two to make a mixed marriage, and that up to the present century there has been a repulsion, not perhaps wholly on one side, between Jews and Gentiles, which would scarcely allow of any wide communion such as would be implied in extensive intermarriage.¹ The ancient and mediæval States were Churches as well as States, and could not allow those to be citizens who could not be of the State religion. The isolation into which Jews were thus cast led, in the course of time, to a feeling of combined contempt and terror about them among the populace. The folklore of Europe regarded the Jews as something infra-human, and it would require an almost impossible amount of large toleration for a Christian maiden of the Middle Ages to regard union with a Jew as anything other than unnatural. The ancients had something of this feeling, and it was trebly intensified when the Church rose into power, regarding the Jews as the arch-heretics, the Deicides, the incarnate anti-Christ. Even at the present day, with all its toleration or indifference, much of this feeling remains, as sad experience has shown in Germany, Austria, Russia, and Roumania, and while it lasts no commingling of the opposing parties can take place on a large scale. At the present day the only country where mixed marriages occur in appreciable numbers is Prussia, where the majority of the offspring are brought up as Christians ("Studies in Jewish Statistics," p. 54). Taking all the Jews of the world it may be doubted if one mixed marriage occurs to five hundred pure Jewish marriages. And if this is so under the most fortunate circumstances Jews have ever known, intermarriage is not likely to have been more frequent in times of greater mutual repulsion. We might take the condition of affairs in Algeria as answering to the most favourable relations of Jews and Christians in the Middle Ages. Yet what do we find there? During nearly half a century (1830-77) in an average population of 25,000 Jews there have only been thirty mixed marriages altogether—not one a year (Ricoux, "La Demographie de l'Algerie," 1880, p. 71).

For these reasons I am inclined to support the long-standing belief in the substantial purity of the Jewish race, and to hold that the vast majority of contemporary Jews are the lineal descendants of the Diaspora of the Roman Empire. The question is one the main interest of which is anthropological, and its

¹ Even in the most isolated "colonies" of Jews, strenuous efforts seem to have been made to prevent fusion with the surrounding races. The white Jews of Cochim still preserve their identity from the black Jews. The Jews of China, the most isolated of all, seemed to have stood out for a long period. Even in 1851, two *Tsungs* (or 100 families) of the eight of which they were composed did not marry the daughters of the "heathen Chinese" (Finn, "Orphan Colony," p. 23).

complex difficulties can only hope for an ultimate solution from the progress of the Science of Man. I have therefore been glad of an opportunity of bringing it before the Anthropological Institute.

Explanation of Plates I and II.¹

The plates I and II accompanying this paper (first given in the *Photographic News* of April 17th and 24th, 1885, with articles by Mr. Galton and myself, the former explaining the process fully) give eight composites of Jewish lads on the left hand sides and opposite to the top and the bottom composite, the five components of which in each case they are composed. The middle composite on the right hand side is a co-composite of the other two, and thus practically contains the whole of the ten components. The composite on the extreme left is in each case that of five older lads who are not shown. The composites have capital letters attached to them, the components smaller letters corresponding to the former, Thus A, is the composite produced by taking the photographs $a_1, a_2, a_3, a_4,$ and a_5 accurately one on top of the other on the same sensitized plate. The discrepant features blur out while the common characteristics intensify one another and produce a *type* of all the components. B represents in the same way b_1 to b_5 , and C is then formed by superimposing A on B on the same negative.² D is a composite produced like A from five photographs of older youths which could not be given for want of space. Similar explanations apply to the composite E to H.

Of the fidelity with which they portray the Jewish expression there can be no doubt. Each of the eight composites shown might be taken as the portrait of a Jewish lad quite as readily as any of the components. In some cases, indeed, *e.g.*, f_3 , the portraits are less Jewish than the composites. The individuality and, I may perhaps even add, the beauty of these composites are very striking. It is difficult, even for those who know the process, to grasp the fact that the composite E is anything but the portrait of an individual; and the same may be said of D, the composite of five older lads, whose portraits are not shown. A, again, the composite of the five a 's, reminds me of several Jewish youngsters of my acquaintance, and might be taken for a slightly blurred photograph of any of them. This is the more curious since A does not resemble very closely any one of its components. These facts are something more than curious; they carry with them conclusions of scientific importance. If these Jewish lads, selected almost at random, and with parents

¹ The Council is indebted for these plates to the kindness of Mr. Thomas Bolas, of the *Photographic News*.

² C was afterwards "stiffened" by the addition of three other photographs.

from opposite parts of Europe, yield so markedly individual a type, it can only be because there actually exists a definite and well-defined organic type of modern Jews. Photographic science thus seems to confirm the conclusion I have drawn from history, that there has been scarcely any admixture of alien blood amongst the Jews since their dispersion.

These composites, there can be no doubt, give the Jewish expression. What do they teach us as to the elements which go to form it? The popular idea of a Jewish face is, that it has a long nose. But the full-face composites A to D have decidedly the Jewish expression, though the shape of the nose does not appear; and further, in composite H, as well as in co-composite G, which represents ten Jewish boys "rolled into one," the shape of the nose is markedly blurred, showing that there is no uniformity in this respect. The popular impression seems, then, to be disproved by these composites. Yet it contains a part of the truth, as do most of those rough averages which we term impressions. The nose does contribute much towards producing the Jewish expression, but it is not so much the shape of its profile as the accentuation and flexibility of the *nostrils*. This is specially marked in the composite D. Take a narrow strip of paper and place it over the nose in this composite, and much, though not all, of the Jewish expression disappears. And in the profile *components* it will be observed that every face has the curve of the nostril more distinctly marked than would be the case in the ordinary Teutonic face, for example.

A curious experiment illustrates this importance of the nostril towards making the Jewish expression. Artists tell us that the best way to make a caricature of the Jewish nose is to write a figure 6 with a long tail (fig. 1); now remove the turn of the



Fig. 1.



Fig. 2.



Fig. 3.

twist as in fig. 2, and much of the Jewishness disappears; and it vanishes entirely when we draw the continuation horizontally as in fig. 3. We may conclude, then, as regards the Jewish nose, that it is more the nostril than the nose itself which goes to form the characteristic Jewish expression.

But it is not alone this "nostrility" which makes a Jewish

face so easily recognizable. Cover up every part of composite A but the eyes, and yet I fancy any one familiar with Jews would say, "Those are Jewish eyes." I am less able to analyse this effect than in the case of the nose. The fulness of the upper lid, and the protuberance of the lower, may be remarked, as well as the scantiness of the eyebrows towards the outer edges. The size, brilliance, and darkness of the iris are also well marked. Many persons have remarked to me that Jewish eyes seem set closer together, and this property is seen in composites A and D giving much of its expression to the latter. I fail to see any of the cold calculation which Mr. Galton noticed in the boys at the school, at any rate in the composites A, B, and C. There is something more like the dreamer and thinker than the merchant in A. In fact, on my showing this to an eminent painter of my acquaintance, he exclaimed, "I imagine that is how Spinoza looked when a lad," a piece of artistic insight which is remarkably confirmed by the portraits of the philosopher, though the artist had never seen one. The cold and somewhat hard look in composite D, however, is more confirmatory of Mr. Galton's impression. It is noteworthy that this is seen in a composite of young fellows between seventeen and twenty, who have had to fight a hard battle of life even by that early age.

There remains the forehead, mouth, and chin to add their quota to the Jewish expression. The predominating characteristic of the forehead is breadth, and perhaps the thick and dark hair encircling it has something to contribute to the Jewishness of the face. The thickness of the lips, and especially a characteristic pout of the lower one, come out markedly in components and composites, both full face and profile. One may observe, too, the dimples (if one may use the term) which mark the termination of the mouth, and are seen in an exaggerated form in a_1 . Finally, the heavy chin, especially marked in the profile composites, confirms the popular association of this feature with the quality of perseverance, so ingrained in the Jewish nature.

We learn, then, from these composites that the Jewish expression is considerably more complicated than is ordinarily thought. Judged by these composites the Jewish face has accentuated flexible nostrils, largish mouth, with ends well marked, and pouting under-lip, heavy chin, broad forehead, with prominent superciliary ridges scantily covered with hair towards the outer extremities, and large brilliant dark eyes, set closely together, with heavy upper and protuberant lower lid, having a thoughtful expression in youth, transformed into a keen and penetrating gaze by manhood.

But words fail one most grievously in trying to split up into its elements that most living of all things, human expression;

and Mr Galton's composites say in a glance more than the most skilful physiognomist could express in many pages. "The best definition," said the old logicians, "is pointing with the finger" (*demonstratio optima definitio*); and the composites here given will doubtless form for a long time to come the best available definition of the Jewish expression and the Jewish type.

DISCUSSION.

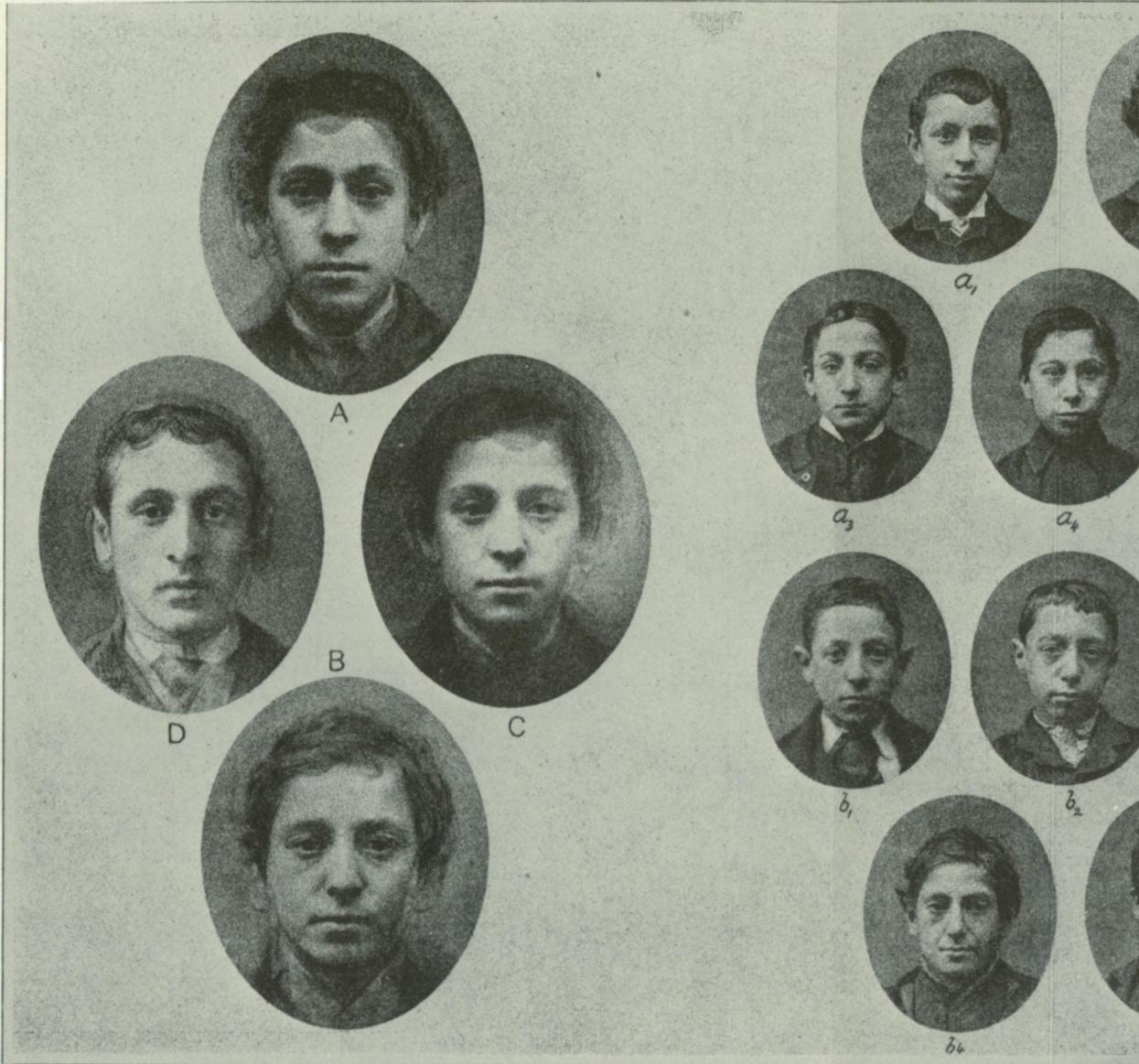
The Rev. Dr. HERMANN ADLER (Delegate Chief Rabbi) congratulated the President on having chosen a subject of such profound interest to the student of anthropology. He agreed with the view propounded by Mr. Jacobs in his exhaustive paper, that on the whole there had not been any large foreign admixture with the Jewish race. As a theme for further inquiry, he drew attention to the copies in Dr. Wright's "Empire of the Hittites" of the representations discovered near Carchemish of the ancient inhabitants of that country. Their features bore an extraordinary resemblance to the inferior Hebraic type, with low forehead, hooked nose, and thick lips. If the hypothesis of Professor Sayce and Dr. Wright were accepted as correct, might the existence of this type, which argued kinship with the Mongolian race, and which differed so materially from the characteristic features of the Semitic race—the expanded forehead and symmetrical lineaments—be traced to intermarriage with the Hittites who are represented in the Bible as descended from Ham?¹ The dark and the blonde type, the speaker believed, should be regarded as original, dating from Bible times and described respectively in Canticles v, 11, and 2 Samuel xvi, 12. That the existence of the blonde type was not due to intermarriage might be proved by the fact that it was to be found among the Jews of North Africa, Syria, Arabia, and Persia, where, owing to the prevalence of fanaticism, mixed marriages had rarely, if ever, taken place. Goethe, a man of science as well as a poet, had pithily summed up the main anthropological characteristic of the Hebrew race in the words: "Es ist das beharrlichste Volk der Erde. Es ist, es war, es wird sein."

Dr. BEHREND observed that M. Littré had well said that all springs of human conduct arose from two instincts, that of self-preservation, and the reproductive instinct for the preservation of the race. The rightful cultivation of these two instincts led to the primary desire of all humanity—happiness, and the chief element in human happiness was health. Health, both of body and

¹ *Note by Mr. Jacobs.*—These Jewish-looking "Hittites" were probably the Semitic vassals of the genuine Hittites. Mr. T. Tyler has pointed out to me at the British Museum two types on the monuments, one of Mongolian features and a kind of Chinese tail, the other of the ordinary Semitic type. The latter he conjectures to be the vassals of the former, and thus their Jewish appearance is simply another example of the identity of the Jewish and the Semitic type.

THE JEWISH TYPE.

Full Face.



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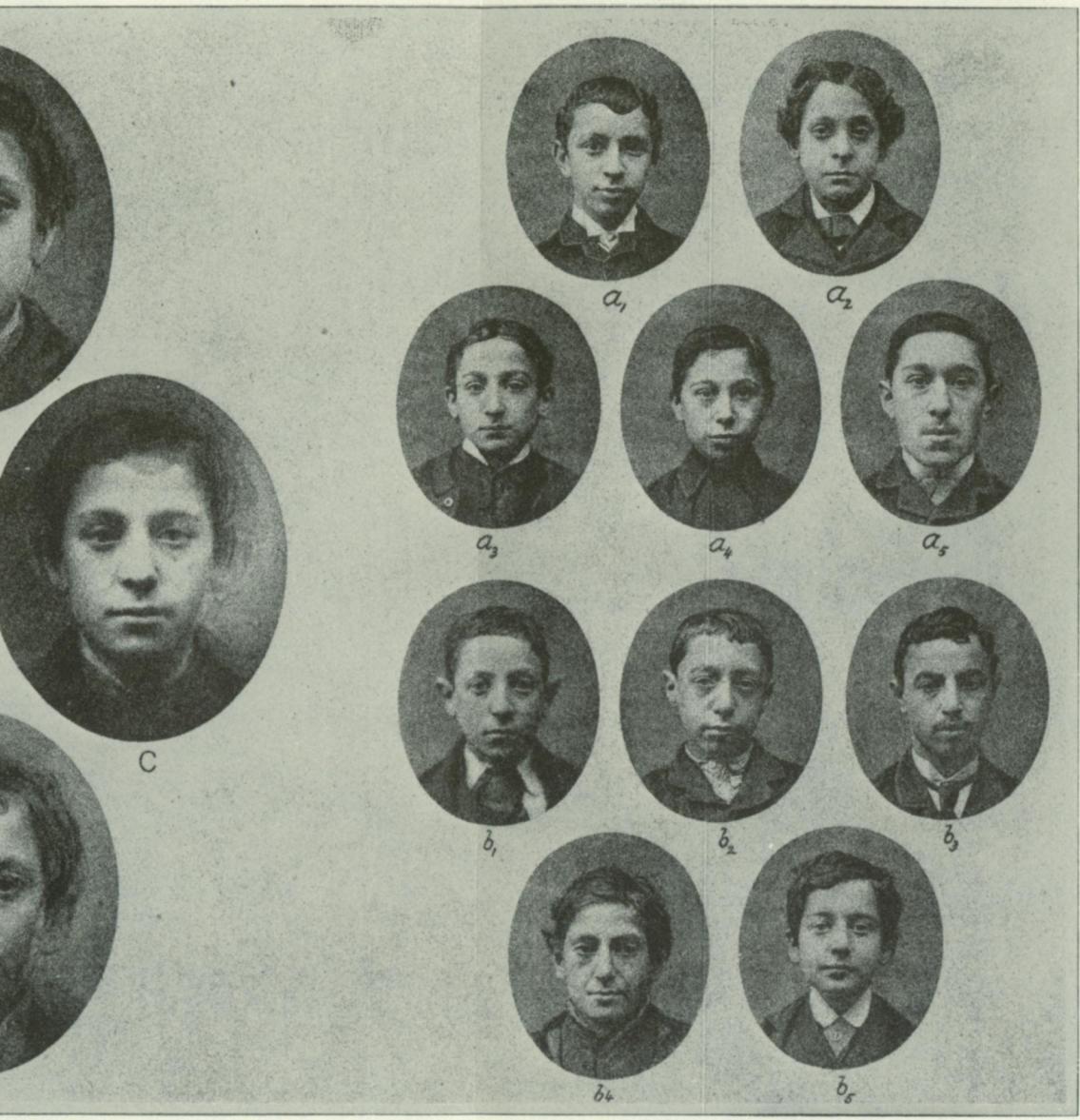
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ILLUSTRATIONS OF COMPOSITE PORTRAITURE.

mind, depended mainly upon conduct, not only of the individual, but also from heredity. Therefore we should expect that as conduct (and through conduct, health; and through health, happiness) was the object of religion, a code of religion should lay down laws, which would be a guide of conduct, and thereby conduce to health and happiness. These primary instincts, that of self-preservation and the reproductive instinct, were mainly regulated in the Jewish code by laws concerning diet, circumcision, and the sexual relations. The speaker had shown elsewhere at length (in a series of papers "On the Communicability to Man of the Diseases from Animals used as Food") that the Hebraic dietary laws preserved from the transmission of such diseases, and especially from the ravages of tuberculosis, which in its various forms was accountable for at least one-fifth of the entire mortality in this country. The sexual relations were regulated in the Hebrew code by laws which aimed at conserving the highest attainable degree of virility, by restraining undue indulgence, and ensuring procreation only at a specially healthy period. We need hardly pause to dwell on the enormous advantages such a start in the battle of life must give towards the "survival of the fittest."

The special biostatic privileges of Jews might be summed up in the proved facts that they married less, had fewer births, died less (that is, lived longer), increased at a greater rate, and had fewer stillborn and illegitimate children than any other race. It was quite unnecessary to repeat the statistics upon these points: they had been given over and over again, as by Hoffmann, Koll, Bergmann, Legoyt, Bernouilli, Lagneau, Loeb, and many others; but it was interesting, and to the Jews vitally instructive, to note that in proportion as they mixed with other races—either of their own accord or by the spread of social tolerance—they lost these biostatic privileges, and the differences became effaced. Thus M. de Bergmann ("Beiträge zur Geschichte der Bevölkerung in Deutschland") showed that the relation of the sexes among the Jews in Posen had of late become much modified: that while from 1819 to 1864 it was as 111·94 boys to 100 girls, it fell to 106·39 to 100 from 1864 to 1873; similarly, the proportion of illegitimate births among them had increased, showing a relaxation in their adherence to the Mosaic code. In every one of the biostatic privileges they enjoyed, the penalty had to be paid for laxity of observances, and either in their own persons or in their descendants those who transgressed had to submit to the inexorable law of "being cut off from their own people," as far as was concerned in their share of the physical advantages of their race.

Mr. F. D. MOCATTA remarked that in addition to the two greater divisions of the Jewish race, Sephardim (Spanish) and Ashkenazim (German), not to mention the Italian Jews, there were various other families of Jews, such as those of the interior of Morocco, speaking Arabic, and not Spanish, those of Persia and of Yemen, and others. Besides these were large numbers of Jews in various countries, who might be considered not to be of the seed of

Abraham, or only to be to a greater or lesser degree crossed with it. Such were the Beni-Israel of Bombay, those of Foo-Choo-Foo (now nearly obliterated), the Riff Jews of the north of Morocco (an armed warlike set, loosely adhering to Judaism, but differing in physique and habit from other Jews), the nearly black and crispy Malabar Jews, &c. Also the Jews of South-East Russia in Europe who speak Russian, and are a well-developed, hardy, and generally ruddy race, are probably a different family from those of Poland and Central Russia, who still speak a dialect of German, their ancestors having been driven out of Germany at the period of the Crusades. This family might possibly represent, as the Karaites of the Crimea were often supposed to do, the descendants of the Khozars, a tribe on the Caspian, who about the seventh century founded a state and maintained it for the best part of two centuries, adopting the Jewish religion. All these, so to speak, outlying families of Jews might be regarded as descendants of proselytes, but as they had blended but very little with the general mass of the Jews, they did not much affect the subject then under consideration. In Biblical times the Jews frequently made matrimonial alliance with the surrounding populations, and it was a constant theme of the reproach of prophets and reformers, notably of Ezra and Nehemiah. Later on, at the time of the conquest of Titus, and when Christianity was only dawning on the Latin world, many Jews were carried to Rome, the bulk being the common people, who were put to labour on public works, and often devoured at gladiatorial shows; but some of whom being scholars and persons of refinement were admitted into Roman society, and by the purity of their doctrine won over to their philosophy and religion many of the higher classes, notably women, who were becoming tired of the superstitions and worldliness into which the pagan religions had degenerated. This probably led to alliances, and such is M. Renan's opinion. The Jews also, ever prone to adopt the habits and manners of surrounding nations, became lax, Romanised and Hellenised their names, as was evidenced in the Jewish catacombs at Rome, and probably contracted marriages with the people around them. All these sources might have led to an admixture of non-Jewish blood, the extent of such admixture (the alliances being at all times exceptional rather than general, and having become rarer with the persecutions which set in in the earlier ages of the Christian Church) was not likely to have essentially modified either the type or the physical or moral characteristics of the Jewish race, which might therefore be regarded for all practical purposes as pure. This was all the more probable since a large number of the issues of such mixed alliances naturally fell back to the dominant religions of the various times and countries, and ceased to have anything to do with Judaism. The speaker said he had not alluded to alliances made between Jews and Oriental peoples, Mohammedans, &c., in earlier times, firstly because it would be difficult to prove their frequency or the contrary, and secondly, because these peoples, being for the most part Semitic themselves, the changes thus induced would have been far less accentuated.

Sir JOSEPH FAYRER had no criticisms to make on the erudite papers which had been read that evening, but would ask one or two questions, first remarking that he had known Jews in Calcutta where one member of the family had light hair and grey eyes, another dark hair and complexion. It struck him that the Armenians presented those peculiar characteristics of physiognomy which were usually attributed to the Jew. Was this not simply a question of race, both being Semitic, and should not the so-called Jewish physiognomy rather be called Semitic than be regarded as the special attribute of the Hebrew as distinct from other Semitic races such as the Armenian? The speaker would ask the learned author of the second paper (Mr. Jacobs) if he could give any information as to the relation of the Afghans to the Jews? They undoubtedly had the physiognomy strongly marked,—it was often said they were descendants of the lost tribes, and there was a tribe among them calling themselves Beni-Israel. What was known and accepted among erudite Jews as to the origin of the Afghans? Again, what was the origin of the race of Black Jews on the Malabar coast? Were these not a mixed race, and were they not the result of admixture with the Teluigan races of Southern India? Pure as the Jewish race is, it would seem that it must be recognised that evidences of such admixture with other races did exist, and it would also seem that they had taken more or less an impression from their surroundings and from the character of the races among which they had settled.

Mr. LUCIEN WOLF did not agree with Mr. Jacobs' view of the physiological characteristics of Jews. Mr. Jacobs practically denied the existence of these characteristics, whereas the speaker felt inclined not only to assert their existence, but to assert that they were as well defined as to form real race distinctions. This view could be proved by statistics, and figures could also be given to prove the immunity of Jews from phthisis, which Mr. Jacobs contested. The purity of the race could not be demonstrated by anthropological measurements, for, physically, Jews varied enormously. It was different with their vital characteristics, and while we found that these were maintained at a high average we might rest assured that the race was being conserved. The evidence brought forward by Dr. Neubauer in favour of his view that the Jewish race had not kept itself pure told against the proposition it was intended to support when it was tested by other evidence. Thus it might be asked how was it that, notwithstanding these large accessions to Judaism, the race had not increased, and that in spite of these large infusions of alien blood, so important a vital characteristic as its high reproductive power has not become modified. It must be obvious that had the remarkable multiplying power of the Jews been left unchecked they must have increased far beyond their present numbers, and if they could receive accessions from other races without diminishing this power, then by this time they ought to have peopled the world. The conclusion must be then that the mixed marriages referred to had

not affected the purity of the race. By their tendency to sterility they have periodically carried off the perpetually growing fringe of Judaism, leaving always a pure nucleus to repropagate itself. Thus by bringing to light the fact that mixed marriages were generally sterile, the evidence cited by Dr. Neubauer, instead of telling against the purity of the Jewish race, revealed the most powerful argument in its favour. Nor was this theory of sterility a theory only. The speaker had investigated a large number of cases of mixed marriages—not quite so many as Mr. Jacobs—and in every single case he had found, if not absolute sterility, at least a falling off in the vital power of the offspring, placing them far below the average obtaining in the Jewish community. This falling off was only postponed sterility, as he had had occasion to prove himself by investigating the history through several generations of a few mixed marriages.

Mr. MARCUS N. ADLER said that in his capacity as Actuary he had had opportunities of examining various statistics bearing on the subject under discussion. He agreed with Mr. Jacobs' remark that in the case of Jews mixed marriages were not so productive as ordinary marriages. On this point Herr von Fircks had published some interesting statistics in the official Journal of the Statistical Bureau of Prussia, and a good deal of weight must be attached to these figures, inasmuch as the entire population of Prussia is compared with the Jewish population, which exceeds 300,000. It would appear, dealing with the averages from the year 1875 to the year 1881, that out of 100 marriages—

Where both parents were Protestants	there were	430	children.
“ “ “ “ Roman Catholics	“ “	520	“
“ “ “ “ Jews	“ “	441	“
“ one of the parents was a Protestant and the other Roman Catholic	“ “	325	“
“ one of the parents was Christian and the other Jewish	“ “	165	“
“ the father was a Jew and the mother a Protestant	“ “	131	“

If we bore in mind that out of the number born not one-half attained marriageable age, and a still less number actually married, it followed that the descendants of mixed marriages were comparatively few, and this consideration became an important element in the argument as to the comparative purity of the Jewish race at the present day. With regard to insanity, there was little doubt but that it was more prevalent amongst Jews than among the Christian population. M. Legoyt published some statistics which would show that while one person was insane out of every 1,200 Protestants, and one person insane out of every 1,000 Roman Catholics, amongst the Jews one person was insane out of every 760. It would not do to ascribe this to marriages amongst near relations being rather frequent amongst Jews, for if so, why should there be a larger number of insane amongst Roman Catholics than amongst Protestants, seeing

that amongst the Roman Catholics marriages between cousins are prohibited? Moreover, Mr. George Darwin, in an interesting article which appeared in the *Fortnightly Review* in 1875, showed that insanity is not more prevalent in the offspring of marriages of cousins than in the offspring of other marriages. It was, however, found that persons living in towns were more subject to insanity than those living in the open country, and since the Jews mostly inhabit towns, the speaker was disposed to ascribe the more numerous cases of insanity among the Jews to the fact of their living among densely populated districts, also to their being more addicted to head work than to manual labour, and to many of them being of rather a nervous temperament.

Dr. ASHER believed that the figures supplied by Mr. Joseph Jacobs as to the prevalence of phthisis among Jews were entirely fallacious. Jews had an extraordinary power of resistance to phthisis, but when exposed for sufficient time to all those surroundings which lower vitality beyond the limits which their constitutions could bear, they necessarily succumb, but they endured and resisted far far beyond what would kill those not of their race. From an experience of several years as surgeon to the Jewish Board of Guardians, the speaker was enabled to say that phthisis among English Jews was almost unknown: the vast majority of those who died from tuberculosis were Russians or Poles, who in their own countries had been herded together under the most insanitary conditions. It was no more fair to accuse Jews of special liability to tuberculosis on account of those deaths than it would be to say that Brompton is a district specially liable to that disease because there were so many deaths therefrom in the hospitals with which the district abounded. Figures and facts substantiating the above would be found in the report for 1859 of Dr. Septimus Gibbon, Medical Officer of Health.

Mr. JOSEPH JACOBS, in reply, expressed his regret at the absence of Dr. Neubauer, which had deprived the meeting of his valuable criticism, though it had doubtless freed himself from a formidable opponent. He was under the impression that the translation "red-haired" in 1 Sam. xvi, 12, was mistaken, and that the word *edmoni* simply implied "ruddy," which might apply to a dark as to a fair complexion. He had only referred to the mistranslation of the Targum as showing that Jews of the sixth century A.D. saw no objection to a Jewish king being red-haired. There was no special Jewish theory of the origin of the Afghans. They shared with many other races of uncertain origin the doubtful honour of being connected with the Ten Tribes about whom so many wild theories had been broached. This was possible; or their Semitic appearance might be due to descent from the tribes of North Arabia or Mesopotamia. The Black Jews of Malabar were known to be proselytes of the White Jews who had arrived there. Mr. Wolf's remarks seemed to him to overlook the great complexity of the problems dealing with the origin of the biostatic and physical characteristics of the Jews. These might be due either to common

race or to common customs, and he was inclined to attribute them mainly to the latter. He had not denied their existence, indeed he hoped he had exhibited them with a larger body of evidence than had hitherto been collected. But he doubted whether they could be adduced to prove the purity of the Jewish race, which was the immediate question before them. There was no evidence to prove that the Jews in mediæval times had increased with the rapidity they are doing at present, and in any case their increase would be much checked by their persecutions which had carried off, he had calculated, over 382,000 victims. As regards phthisis, notwithstanding the remarks that had fallen from the medical gentlemen present, he could not ascertain any definite facts proving that Jews possess any racial immunity from the disease, though he had not "accused" them of any special liability to it. As Dr. Asher had owned, Jews were sometimes more and sometimes less afflicted by tubercle than their neighbours, showing that environment had most to do with their liability to consumption. In conclusion, he expressed a desire to hear the opinion of trained anthropologists on the main question. If light hair and eyes amidst a race generally dark necessarily proved intermixture, then one-fifth of contemporary Jews afforded that proof, though he had shown that these existed at a very early date. But if not, he saw no reason from history for denying that the Jews of the present day were the direct descendants of the Jews of the Bible.

Note by Mr. F. Galton.

The individual photographs were taken with hardly any selection from among the boys in the Jews' Free School, Bell Lane. They were the children of poor parents. As I drove to the school through the adjacent Jewish quarter, the expression of the people that most struck me was their cold, scanning gaze, and this was equally characteristic of the schoolboys.

The composites were made with a camera that had numerous adjustments for varying the position and scale of the individual portraits with reference to fixed fiducial lines; but, beautiful as those adjustments are, if I were to begin entirely afresh, I should discard them, and should proceed in quite a different way. This cannot be described intelligibly and at the same time briefly, but it is explained with sufficient fulness in the *Photographic News*, 1885, p. 244.