



On the Comparative Anthropometry of English Jews

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Peronville. Megalithic stones (J.).

St. Piat (Changé). Megalithic monuments (J.). Menhir called Pierrefitte, dolmen called le Berceau, two upright stones, and dolmen (see description of these *ante*). Dolmen called Chapelle du Martyre, dolmen called Pierre fritte, near Mévaisin (R.).

Plancheville (south of). Four or five large stones called Pierres Main Verte, where people go to render homage to the Chapter of Chartres Cathedral (R.).

Prudemanche. Megalithic stones (J.).

Prunay-le-Gillon. Dolmen (J.).

Saumeray. Ruined dolmen (J.). Ruined dolmen on left bank of Loir, on road from Illiers to Bonneval; at Montemain an inclined dolmen (one stone 2 m. 60 × 2 m. 30, resting on two others; towards Alluyes a peulven and some other stones (R.).

Thimert. Megalith (J.).

Toury. Dolmen (J.). Dolmen, capstone $3\frac{1}{2}$ metres long, resting on one stone, 1 m. 15 high, called Pierre de Gargantua (because thought to be erected by this giant) (R.).

Trizay les Bonneval. Near mill of Fricot a gigantic dolmen 14 metres round (J.). Planche de Beaumont near mill of Fricot (R.). See description *ante*.

Ver les Chartres. Megalithic stone of Pierre Pesant (J.). A very large dolmen, much mutilated and buried nearly to level of platform (R.). Pierre Pesant marked on (M.), but on enquiry I was told there was no stone there, and that it was only the name of the place. A.L.L.

Vert en Drouais. Megalithic stones (J.).

Villiers St. Orient. "Pierre Druidique" 2 kilos. south-west from (M.).

Vitray-en-Beauce. Near Beauvoir, a megalithic stone (J.). "Pierre Celtique" (M.).

Voves. Dolmen de la Pierre Levée (J.), "Pierre Druidique" 2 kilos. south from (M.). I was told that this was one stone supported by another (presumably a capstone with only one supporter left), but too far for me to get to while waiting for train. A.L.L.

Ymeray. Pierres megalithiques (J.).

Ymonville. Pierre megalithique (J.), 2 kilos. south from, Pierre Druidique (M.). An inclined dolmen, two upright stones one metre high supporting capstone 2 m. × 1 m. 78 (R.).

MR. J. JACOBS then read the following Paper:—

On the COMPARATIVE ANTHROPOMETRY of ENGLISH JEWS.

By JOSEPH JACOBS and ISIDORE SPIELMAN.

(WITH PLATE IV.)

In the present paper, we give the results of a number of anthropometric observations on English Jews of various classes carried out on lines as far as possible parallel to Mr. Galton's classical experiments at the International Health Exhibition, 1885. The measurements were made in the first instance at the Jewish Working Men's Club, Great Alie Street, E., the Committee of which was kind enough to grant us the use of a room for several weeks, which was fitted up, as nearly as circumstances would permit, in a manner similar to Mr. Galton's Anthropometric Laboratory at South Kensington. Considerable interest was shown by the members of the Club, of both sexes, a large number of whom submitted themselves to the somewhat wearying process of being tested and measured.

After some time the laboratory was moved to the West End where a number of the Jews and Jewesses inhabiting that quarter were good enough to go through it and submit to the various tests. The results were in each case written in duplicate on a printed form, one copy being torn off and presented to the examinees as some slight return for their kindness.

Great assistance was given throughout by Mr. and Mrs. Ernest Franklin, while Mr. Lissack, the Honorary Secretary of the Club, facilitated our work in every way in his power.

Our apparatus was modelled after those used by Mr. Galton at the Health Exhibition in order that our comparisons might be as correct as possible.

The measurements and tests taken were :—

Height standing without shoes.

Height sitting.

Keeness of sight.

Judgment of eye.

Colour sense.

Hearing ; highest audible note.

Breathing power (spirometer, graduated cubic inches).

Strength of stronger hand.

Strength of pull.

Weight in ordinary indoor clothing.

Chest circumference.

Colour of eyes and hair.

Besides these we took measurements of the length and breadth of head, for the most part with ordinary callipers graduated

on the French scale ; but towards the end of our investigations we devised an instrument which might be adopted by anthropologists.

We found that this head measurement could be more conveniently taken when the "subject" is in a sitting position and directly after the sitting height is obtained. The apparatus consists of a flat piece of board about 12" \times 9". Directly beneath this, two guides are suspended about 9" apart, so that the widest head may easily go between them. A metal socket moves up and down on each of these guides and is made to fit tightly by means of springs. Attached to the sockets is a frame of steel wire $\frac{3}{16}$ " thick, and which is held in a perfectly horizontal position. This wire is bent in such a way as to make the "tour of the face," resting like a spectacle frame without eye-holes, upon the lower socket of the eye.

The measurement is taken thus :—The board is brought down horizontally upon the vertex of the head of the person sitting, so that the head comes between the guides. The sockets carrying the frame are then brought down the guides until the curved part of the frame rests upon the lower socket of the eye, and the sides of the frame are level with the orifice of the ear. This compels the head to be held in the requisite position for taking this measurement, and the reading upon each guide (which is graduated in centimetres and millimetres) should be identical. The wire may be pressed towards the ear when measuring narrow heads and without losing the horizontal position.

Altogether, by the methods described above, we took on an average 21 measurements on each of 423 individuals ; altogether, 8,863 measurements, a number sufficient to give trustworthy results, as the persons tested were themselves average samples of the two chief classes into which English Jews may be considered as divided. These may be described as "West End Jews," the better nurtured inhabitants of the West End and descendants for the most part of Jews who have been long settled in this country, and "East End Jews," the less fortunately situated Jewish dwellers at the East End, the parents of whom in many cases were born abroad. As far as possible it was desirable to get out results for each of these classes separately, and for the most part we have done so. By this means we are enabled to make our results bear directly on one of the burning questions of anthropology, that of nurture *v.* nature, to use Mr. Galton's convenient phraseology. For the "West End Jews" are ultimately derived from exactly the same race and class as the East End Jews, so that differences of race are totally eliminated, and we are enabled to trace the influence of nurture pure and simple. The problem of deter-

mining purely "racial characteristics" will be considerably simplified if we can in this way determine what may be described in contradistinction as "nurtural characteristics." It is in this connection that our investigations appear to us to have a wider outlook than ordinary anthropometric results.

Our method has been to contrast West End and East End Jews so as to get at the influence of nurture. But besides this, there might be a residuum of race influence which could only be tested by comparison with another race. West End Jews might differ favourably in height from East End Jews and yet all Jews differ unfavourably in height from Englishmen, owing to original difference of race. Another comparison was therefore necessary in order to fully test our results and that was with Englishmen generally.

Here we have Mr. Galton's results before us as a standard, and we have accordingly placed the results for all the Jews examined by us side by side with his results for the English men and women examined at the Health Exhibition. We have throughout adopted Mr. Galton's method of "percentiles" (see "*Journ. Anthropol. Instit.*," xiv, 1885, p. 275) and have given the 5th, 25th, 50th, 75th and 95th percentile in each case. The extremes give what we proposed to call the "range" while the middle number giving practically the "medium" or "average" result, though for some purposes there is a slight difference between the two. Finally we have worked out similar calculations for the 50 or so Sephardic Jews, descendants of the Jews expelled from Spain and mostly descendants of the oldest Jewish residents in this country.

With these preliminary remarks we may now at once present a table summing up our main results. We give also, in Plate IV, a set of curves showing the results of these measurements, and comparing them with Mr. Galton's taken at the Health Exhibition.

The curves commence on the left hand side at the minimum, and end on the right hand side at the maximum capacity, whilst the perpendicular lines, where cutting the curves denote the 5th, 25th, 50th, 75th, and 95th percentile measurements. Of course the most important of these perpendicular lines is the centre one, which shows the mean or average of each class as represented by the curves. We need scarcely add that these curves merely express in graphic form the information contained in Table I.

The black solid curve represents Health Exhibition male measurements.

The bar curve, *all Jewish* measurements for comparison.

The star curve, West End Jews.

The dotted curve, East End Jews.

The dot-and-bar curve, the Sephardim (Spanish and Portuguese Jews).

Comparative Anthropometry of English Jews. By Joseph Jacobs, B.A., and Isidore Spielman.

TABLE I.

Subject of Measurement.	Sex.	"East End" Jews.				"West End" Jews.				Sephardic Jews.				All Jews.				Health Exhibition Measurements (1885).			
		5th	25th	50th	75th	95th	5th	25th	50th	75th	95th	5th	25th	50th	75th	95th	5th	25th	50th	75th	95th
Height standing, without shoes, in inches	Male ...	60-2	63-0	64-3	66-0	68-0	63-4	65-5	67-5	69-4	70-4	62-6	64-0	65-0	66-8	67-0	60-8	63-4	65-0	66-8	67-4
Ditto	Female	57-3	58-5	60-3	61-2	63-0	59-0	60-7	62-0	63-6	66-5	...	...	...	...	...	57-5	59-4	60-8	62-3	63-9
Height sitting, from seat of chair, in inches	Male ...	31-2	33-0	34-0	34-7	36-2	33-5	34-7	35-7	36-6	37-2	33-5	33-8	34-0	35-3	37-5	32-3	33-5	34-7	35-5	37-1
Ditto	Female	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	30-2	31-5	33-0	33-5	34-2
Span of arms, in inches	Male ...	63-0	65-0	67-7	69-0	70-7	64-0	67-5	70-0	72-0	74-0	63-7	65-5	67-0	69-7	73-0	63-5	66-0	68-0	70-0	73-0
Ditto	Female	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	57-0	60-0	61-5	63-0	64-8
Weight in ordinary indoor clothing, in lbs.	Male ...	...	...	...	...	...	...	...	...	...	...	117	122	139	166	187	101	127	139	150	163
Ditto	Female	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	107	110	119	145	154
Breathing capacity, in cubic inches	Male ...	...	...	...	...	...	...	...	...	...	...	140	150	190	223	235	125	175	200	235	270
Ditto	Female	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	112	130	145	165
Strength of pull, as archer with bow, in lbs.	Male ...	...	...	...	...	...	...	...	...	...	...	60	67	70	79	82	50	61	70	82	90
Ditto	Female	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	19	32	40	45	50
Strength of squeeze of stronger hand, in lbs.	Male ...	...	...	...	...	...	...	...	...	...	...	65	70	89	93	94	62	74	82	92	104
Ditto	Female	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	43	48	55	65	66
Keenness of sight, reading distance, in inches	Male ...	0	13	19	25	29	7	19	29	35	38	13	19	25	36	39	7	15	19	29	35
Ditto	Female	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	13	23	29	36

NOTE.—Ages and Units as in Mr. F. Galton's Measurements.
5th, 25th, 50th, 75th, 95th per centiles.

The lighter curves denote the corresponding female measurements in each case.

It will be observed that the black curve is almost invariably at the top of each table both in minimum and maximum measurements, and frequently in the mean measurement; but Mr. Galton's Health Exhibition visitors are beaten in two places: their maximum is inferior in weight to the *Sephardic* Jews, and in keenness of sight to:—The maximum of all Jews and Jewesses, Sephardim and West End Jews. The East End Jews are there, as in all of our measurements, inferior to all but those of the females.

The *Sephardic* Jews are the highest in maximum in weight measurement. They are the *highest* also in keenness of sight test, and their mean is good in both cases. In strength of squeeze they are the highest in the mean, and lowest in minimum and maximum. In strength of pull, they are the highest in minimum, and lowest in mean and maximum. In span, their average is the lowest, but recovers towards the maximum. In height, they retain the 3rd place in maximum, minimum, and mean, the Health Exhibition males and "West End" Jews being superior. In breathing capacity, the same is the case.

The *West End* Jews are highest in average in keenness of sight test, as well as in span of arms. In height, sitting and standing, they retain an even position directly after Health Exhibition male measurements.

The *East End* Jews are practically the lowest everywhere in minimum, maximum, and mean.

The *Jewesses* are superior to the *Jews* in keenness of sight, both in average as well as in minimum and maximum. In this test they are above the Health Exhibition males and females, the "All Jews" maximum, and the East End Jews. The Jewesses are above the Health Exhibition females in minimum, maximum, and mean of strength of squeeze. They are, however, inferior to them in breathing capacity. They are again superior in weight to their Health Exhibition sisters; but inferior in height, sitting and standing, and in span.

The general result of this table is tolerably clear. English Jews in general compare unfavourably in almost all anthropological measurements with the class of Englishmen who visited the Health Exhibition. But if we take the West End Jews, who were probably of very nearly the same class as the Exhibition visitors, the inferiority vanishes almost entirely. Thus, to take an example, while the mean height of "All Jews" was only 65 inches, against 67·9 inches for Mr. Galton's subjects, an inferiority of nearly 3 inches, the West End Jews averaged

67·5 inches against 67·9 inches, an almost inappreciable difference. It is obvious that nurture has made the difference between the heights, both of West End and East End Jews, and between Jews and Englishmen. Are we then to dismiss height altogether from our tests of race? Is it only a difference of nurture that makes the contrast between the Hottentot and the Patagonian? Not altogether, as we can see by scrutinising a little more closely the figures we are discussing. The "means" are much the same among the well-nurtured Jews and the visitors of the Health Exhibition, but "the range," as we have called it, is different. Thus, to take the upper limit, while Englishmen pure and simple reached 72·4 inches, all Jews reached 70 inches and West End Jews reached 70·4 inches.

Here we have seemingly an instance where long continued bad nurture through many generations shows its influence on the measurements of well-nurtured descendants not by reducing the average, but by restricting the range and preventing any very great variations from the artificially reached average.

If this example could be taken as typical, the real test of races is rather to be found in the extreme cases than in the mean. As a matter of fact this is practically the way in which popular judgments about races is made. And yet even in the very case before us we have observed a striking instance of the permanence of race types, even in so variable a thing as height, which seems at first sight to depend only on nurture. In Mr. Jacob's paper on "The Racial Characteristics of Modern Jews" (*Journal*, Vol. xv, 1885, p. 34), he gives the measurements of height for nearly 13,000 Jews, which average 161·2 millimetres or 63·47 inches. This is remarkably near the 63·75 inches which is given in our table as the mean height of all the English Jews examined by us. Altogether it would appear that while anthropological measurements depend on nurture, social conditions tend to preserve the same kind of nurture in various races, and so keep the racial measurements constant. If any change of the conditions of nurture occur, pre-existing conditions of bad nurture tend to lower the "range" in well-nurtured descendants rather than to depress the average. The extremes, say the 95th per centile, are thus more trustworthy racial tests than the average or mean.

Applying this test to our general results, we find inferiority all along the line in the general results of English Jews as compared with other Englishmen, except in two particulars, viz., weight in Jewesses and keenness of sight in both sexes. It is curious that while the average weight of Jewesses is 9 lbs. below that of other Englishwomen, the highest weight reached is 5 lbs. more in the cases of the Jewesses, a confirmation of the

popular impression of the superior solidity of the Jewess. Turning to keenness of sight, we find again that while the Jewish average is inferior, the higher limit is superior to the extent of 1 inch in the case of males, and of no less than 4 inches in the case of females. A "Jew's eye," in its literal sense, seems therefore a valuable possession so far as keenness of sight, though in its appreciation of colour it is far from being so valuable, as we shall see.

Having discussed such of our results as can be compared with Mr. Galton's, we may now proceed to give the additional information we have obtained and compare them with the results of Mr. Jacob's paper just referred to. Thus taking the colour of hair and eyes, we may compare the results reached as regards English, German, Austrian, and Russian Jews, and may contrast them with the Jews of Spanish descent known as Sephardim.

Colour of Eyes and Hair.

TABLE II.

	Eyes.			Hair.			
	Blue.	Grey.	Brown.	Blonde.	Brown.	Black.	Red.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
English Ashkenazic Jews ...	11·1	30·1	58·8	25·5	52·5	21·3	0·7
English Sephardic Jews ...	21·3	11·9	66·8	11·9	61·6	26·5	0·0
Prussian Jews ...	18·7	27·8	53·5	32·4	55·5	11·6	0·5
Austrian Jews ...	23·5	30·6	45·9	27·0	55·4	17·0	0·6
Russian Jews ...	23·0	24·1	52·9	23·2	59·2	13·1	4·5

It will be observed that the number of blue-eyed English Jews is very small, viz., only 11 per cent. (as indicated by the centre line of figures). The Sephardim show 21 per cent. Taking the blue and grey eyes together as *light coloured eyes*, they reach as much as 37 per cent., as against an average of about 50 per cent. in comparison with their foreign brethren, Prussians, Austrians, and Russians.

The main point in the results concerning hair is the higher proportion of absolutely *black* hair among *all English Jews*, than among those of Prussia, Austria, and Russia. The Sephardim have the largest amount of *black* and the smallest of *blonde* hair, and we did not find any example of *red* hair among them.

Considering the absence of any absolute standards for these colours, the results are tolerably uniform, except as regards two points which are probably connected together, the less proportion of blue eyes and the greater proportion of black hair among English Jews as compared with their foreign brethren.

This may possibly be explained to some degree by the fifth class of Jews, which we have included in the above table. The Sephardim or Jews descended from the refugees from Spain after the expulsion in 1492, are generally darker in complexion, and have darker hair than other Jews, as can be seen from the above table, or still more decidedly from the table given by Dr. Beddoe at the end of his paper on the "Ethnological Characteristics of the Jewish race" (Ethnol. Trans. 1869). Now our measurements included nearly 50 Sephardim, and doubtless others who had Sephardic blood in their veins, so that the black hair of English Jews may be referred to the greater admixture of Sephardim, who do not exist elsewhere to any extent in Northern Europe (except in Holland).¹ On the other hand, the paucity of blue eyes among English Jews cannot be accounted for on this ground, as the Sephardim do not differ materially in this respect from the rest of Jews. We suspect that a confusion of nomenclature has crept in here, and that we were perhaps more rigid than the foreign observers in restricting the term blue to the purest shade of that colour.

While on this point, we may bring in our results as to the colour blindness of English Jews, which is perhaps the most marked characteristic we have reached. This was tested by an instrument exhibiting strips of wool, among which are four with a green shade, and the subject has to select these by placing pegs opposite to them. However the fact is to be explained, the Jews in our experiments showed a remarkable inability to undergo this simple test, as is shown by the following table, which gives the percentage of failures.

			East End.	West End.	All.	Sephardim.
Jews	..	..	14·8	3·4	12·7	13·4
Jewesses	..	..	—	2·1	2·0	0

Previous inquirers have observed the inferiority of the Jewish race in this respect, but the results reached far exceed any

¹ It is to be remarked, however, that this admixture is only of recent date, both branches of the Jewish race having been practically endogamous.

previously reached, which average about 4 per cent. for Jews, whereas our results are more than three times as large. It is possible that in a few instances the directions given were not understood, and the mistakes were rather misunderstandings. But it was too obviously plain in many instances where the subject declared that he could not see any difference between brick-red and pea green, and the fullest allowance for misunderstandings would not reduce the percentage to anything under 10 per cent. The causes of this startling defect are probably to be found in the long continuance of Jewish life in cities, where so much less colour and especially so much less green is to be met with. Of its effects we may refer to two: the absence of any painters of great ability among Jewish celebrities, and the want of taste shown by Jewesses of the lower grades of society in the choice of materials for dress, &c. Where there is so large an amount of total colour blindness, there must also co-exist a still larger proportion of dulled sense of colour and a general lack of interest in the delights of colour, especially in its more refined forms. It seemed to us worth while calling attention to this defect, as it is probable that early training can in some measure overcome it, and it is clear that colour lessons should form part of every Jewish child's training.

We may now pass to another measurement in which Jews are generally credited with inferiority and not without reason. We refer to the girth or circumference of chest which is regarded by some anthropologists as of such importance that they calculate from this the "index of vitality." Unfortunately, we cannot in this case compare with Mr. Galton's results, but it is at any rate reassuring to find that English Jews in this respect compare somewhat favourably with their foreign brethren; their average being 35 inches against 80 cm., or 31.5 inches for 8,000 foreign Jews. Here again the influence of nurture is shown by comparing the measurements for East and West.

Percentiles.	East End.	West End.	All.	Sephardim.
5th, 50th, 95th ..	32-35-39.5	34-36-5-41	32.5-35-40	34-36-39-5

It may be observed that in this important characteristic the Sephardic Jews do not show to any advantage, as it must be confessed they do in most of the measurements in Table I. Except in span and breathing capacity, the Spanish Jews show a slight but marked superiority over their Ashkenazic co-

religionists as the rest of Jews are called. It is a point worthy of notice that the three points of Sephardic inferiority, span, girth, and breathing capacity, have to do with the lungs, and would seem to indicate a lower "index of vitality" among the Spanish Jews. They certainly seem to be dying out, and no longer possess the pre-eminence among Jews that they once did. It would be worth while inquiring whether phthisis is to any appreciable extent more frequent among them than among other Jews.

We now pass from these bodily measurements to those of the head on which we have collected materials greater in number than any observer who hitherto dealt with Jewish craniometry on the living subject. We may sum up the whole material at present available in the following table, in which we have kept to the older names and proportions (mesocephalic = 77·8 — 80).

No.	Index.	Dolicho-	Meso-	Brachy-cephalic.	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.
363	80·0	28·3	28·3	47·4	Jacobs and Spielman.
51	—	17·0	34·0	39·0	Sephardim.

From this it would seem that English Jews are far more long-headed (dolichocephalic) than those on the Continent. This may be partly explained by the fact that our results include some Jewesses and a few lads whose undeveloped crania would tend to lower the average.

But there is, we believe, another explanation which will account for the phenomenon without supposing any deterioration on the part of English Jews, if deterioration it is to be long-headed physically. There might be two men whose cranial index was 75, but the one might have a skull 15 × 20 centimetres, the other 18 × 24. It is obvious that the latter has a larger receptacle for his brain, though he may have the same cranial index. A better test of this "capacity" would be to adopt the plan followed by Mr. Galton in his treatment of Dr. Venn's craniometrical results with regard to Cambridge students. He multiplied height, breadth, and length of skull together, and thus obtained what might be termed a measure of the "knowledge box" of his subject.

Unfortunately, we were unable to take the height of skull,

and could not therefore make the full correction. But we have multiplied together length and breadth, and thus obtained what we might call the "foundation" index of our subjects' skulls. On arranging these as before with the mean between minimum and maximum, and contrasting these with results of the cranial index, we obtain some very light-giving results, which are of sufficient interest to deserve some minute attention being paid to them.

"Foundation Index" of Jewish Heads (5th, 25th, 50th, 75th, 95th per centiles).

TABLE III.

	5th	25th	50th	75th	95th
All English Jews and Jewesses	24·9	26·6	28·0	30·2	32·0
Sephardic Jews	25·8	27·6	28·7	30·4	32·2
West End Jews over 22 years of age	28·5	29·2	30·4	32·0	32·0
West End Jews under 22 years of age	27·5	28·3	29·6	30·0	32·8
East End Jews over 22 years of age	25·2	27·5	27·9	29·2	32·0
East End Jews under 22 years of age	24·0	26·6	27·7	29·2	31·5
West End Jewesses	25·2	26·8	28·5	29·6	32·0
East End Jewesses	24·6	26·1	27·5	28·5	29·5

Here we observe that while the cranial index of the West End Jews indicates dolichocephalism, and, therefore, it would seem inferiority, their "foundation" index would seem to go on all fours with their presumed superiority in intellectual capacity. We find, too, that this index increases slightly with age, that it is inferior among females in the West End, but only slightly so among females in the East. So far then as any knocking at the skull can give any clue of the value of what is within, the "foundation" index would seem to answer that purpose much better than the cranial index, and is much simpler to get at than Mr. Galton's tridimensional "knowledge box." We append a table which gives at once by merely reading off in centimetres length and breadth of skull, both "cranial" index and "foundation" index.

“Cranial” and “Foundation” Indexes given in centimetres.

Length.	Breadth.						
	14	14½	15	15½	16	16½	17
17	82·3	85·4	88·2	91·3	94·2	97·0	100·0
	23·8	24·6	25·5	26·4	27·2	28·0	28·9
17½	79·9	82·8	85·5	88·5	91·3	94·2	97·1
	24·5	25·4	26·2	27·2	28·0	28·9	29·7
18	77·7	80·5	83·4	86·2	88·9	91·6	96·4
	25·2	26·1	27·0	27·9	28·7	29·7	30·6
18½	75·7	78·3	81·0	83·7	86·4	89·2	91·9
	25·9	26·8	27·7	28·7	28·6	30·5	31·4
19	73·6	76·3	79·9	81·7	84·3	86·7	89·5
	26·6	27·5	28·5	29·5	30·4	31·3	32·3
19½	71·8	73·7	76·9	79·5	82·1	84·6	87·2
	27·3	28·3	29·2	30·4	31·2	32·2	33·1
20	70·0	72·5	75·0	77·5	80·0	82·5	85·0
	28·0	29·0	30·0	31·0	32·0	33·0	34·0
20½	68·3	70·7	72·0	75·7	78·0	80·0	82·7
	23·8	29·7	30·7	31·8	32·8	33·8	34·8

Example :—To find cranial index of skull 15 cm. broad by 19 cm. long, look down vertical column headed 15 and along horizontal line opposite figure 19, and read off cranial index 79·9 and foundation index 28·5 (really 285 square cm.).

These seem to us the main points of interest elicited during the progress of our inquiries, and we now have the pleasure of submitting them to the Anthropological Institute for comment and discussion.

Description of Plate IV.

This Plate represents in graphic form the results given in Table I. The black vertical lines represent the 5th, 25th, 50th, 75th and 95th percentiles. The various curves cross these at points showing the measurements reached by 95, 75, 50, 25 and 5 per cent. of the subjects measured. The letters attached to either end of each curve indicate the different classes whose measurements are given.

HM (continuous thick curve) = Health Exhibition results for males.

HF (continuous thin) = Health Exhibition results for females.

AJM (thick bars) = All Jews.

AJF (thin bars) = All Jewesses.

WJM (heavy stars) = West End Jews.

WJF (light stars) = West End Jewesses.

EJM (heavy dots) = East End Jews.

EJF (light dots) = East End Jewesses.

s (dots and bars) = Sephardim or Spanish Jews.

Thus to take an example: if we arranged 100 of each of these classes in a row from the shortest to the tallest, the seventy-fifth in each company would have the height shown by the measurement indicated by the corresponding curve at the seventy-fifth percentile of the lowest set of curves; *e.g.* the seventy-fifth of the East End Jews would be exactly 66 inches, of the Sephardim exactly 68, and so on with the rest.

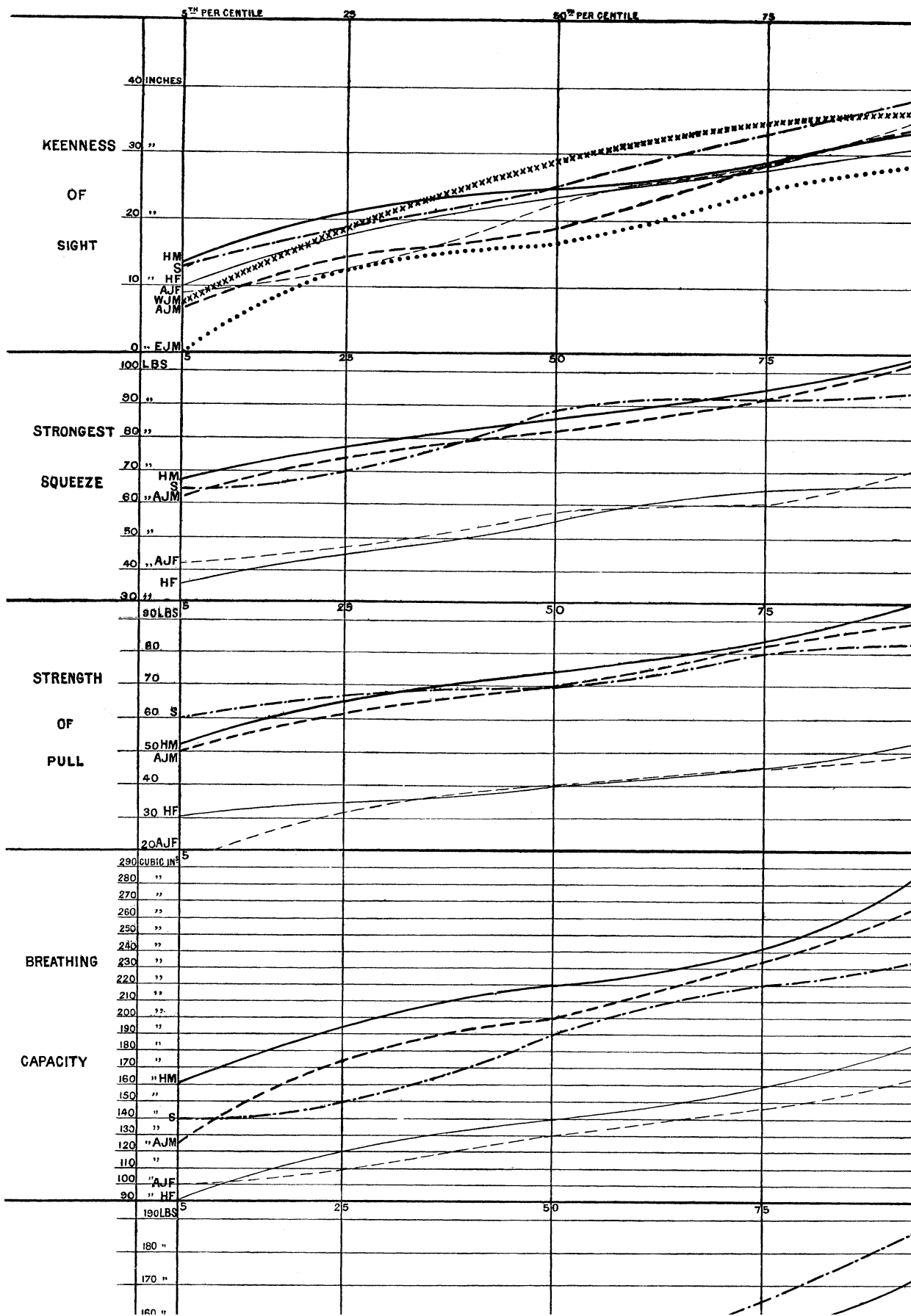
DISCUSSION.

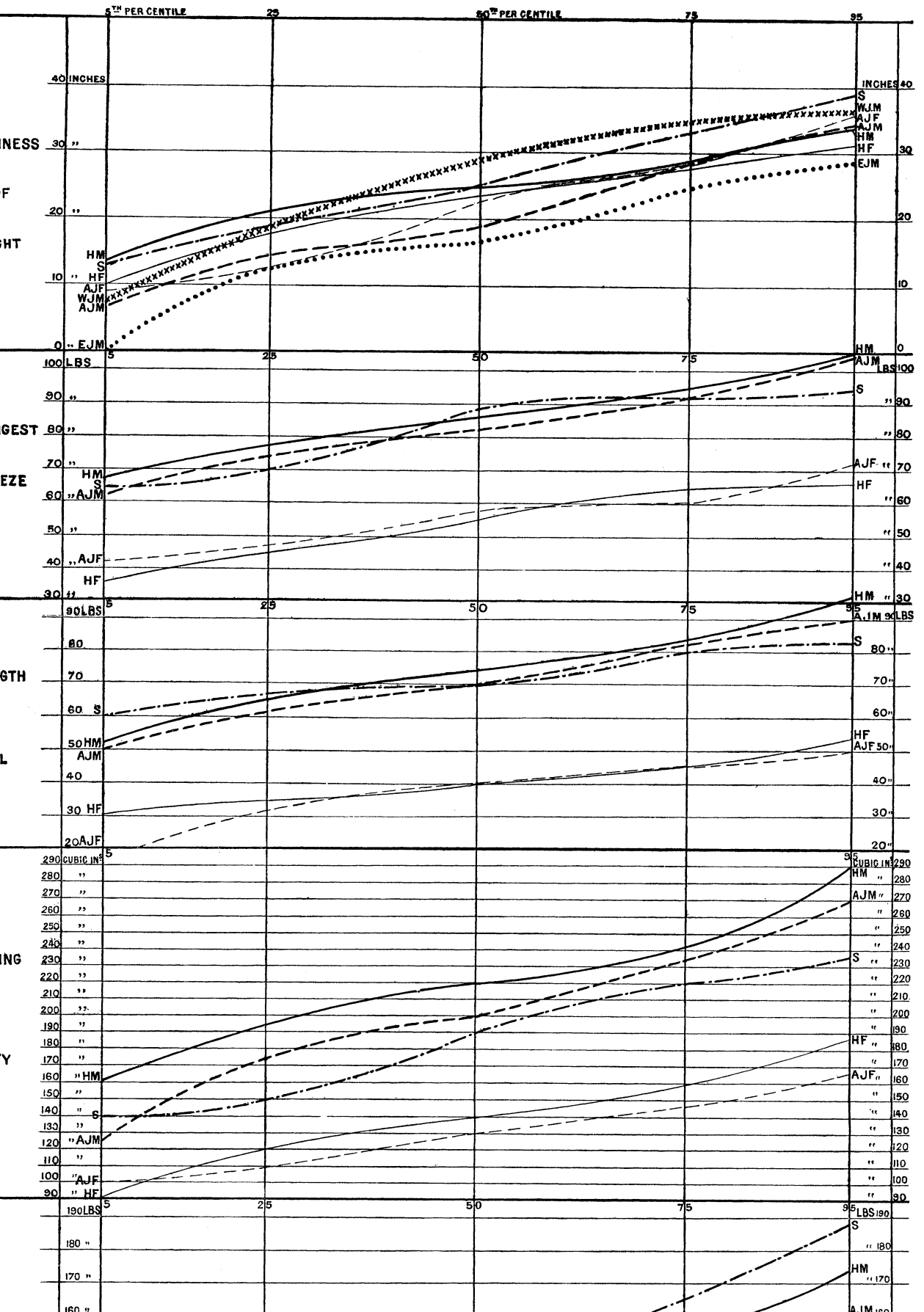
Mr. BRABROOK said that, as he had been Secretary to the Anthropometric Committee of the British Association for several years, it was a satisfaction to him to find that the conclusions of that Committee as to the importance of nurture were borne out by the patient and painstaking investigations of the authors of the paper. With regard to the comparison between Mr. Galton's Health Exhibition statistics and those in the paper, it was to be borne in mind that those who visited the Exhibition and presented themselves for measurement would in the main be healthy persons in good spirits with money in their pockets, and would therefore be rather above than below the average of persons of the same class of life, and while the same might be true in some degree of the Jews referred to in the paper it would not be so to the same extent. This consideration might slightly modify the differences observed. It was in his recollection of the conclusions to which his Committee came that they found the tests of strength by pulling to give doubtful results, and he was therefore disposed to set those aside; but the other observations of Messrs. Jacobs and Spielman appeared to him to be very interesting and valuable.

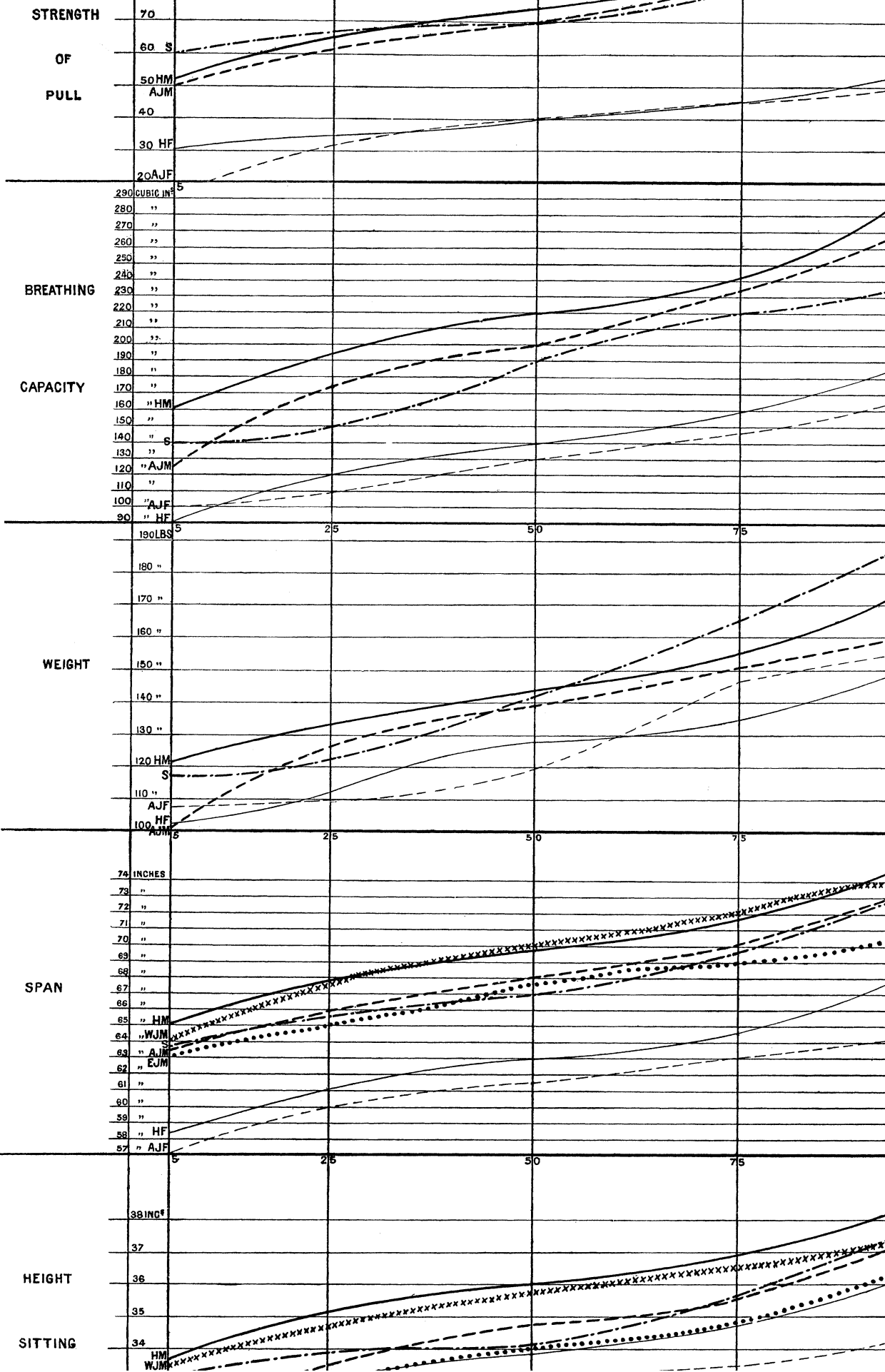
Prof. RUPERT JONES asked if the measured visitors of the Health Exhibition referred to may not have included a sufficient number of Jews and Jewesses to have modified the value of the results when taken merely as for English people.

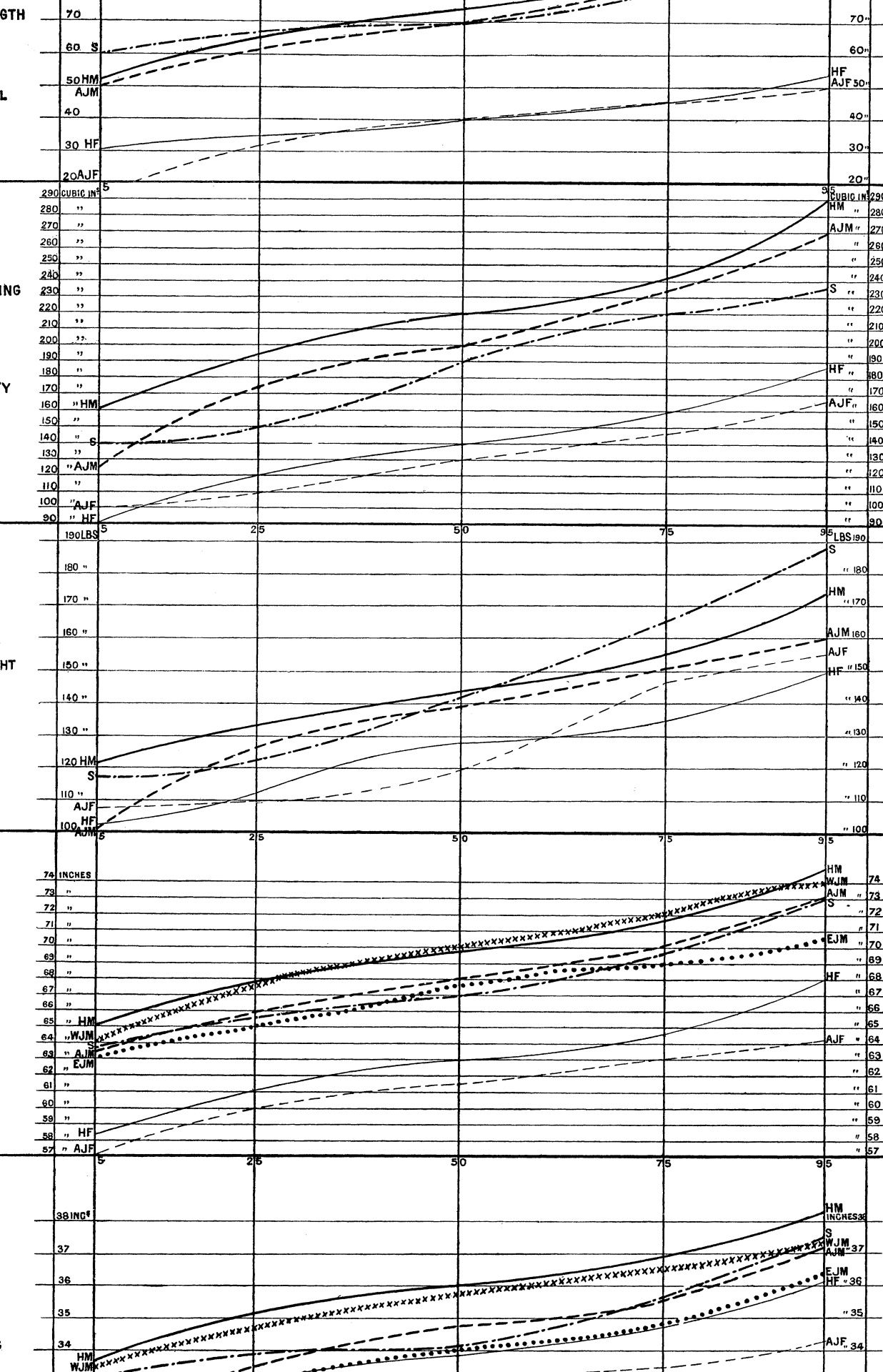
Dr. PHENÉ and Dr. GARSON also joined in the discussion.

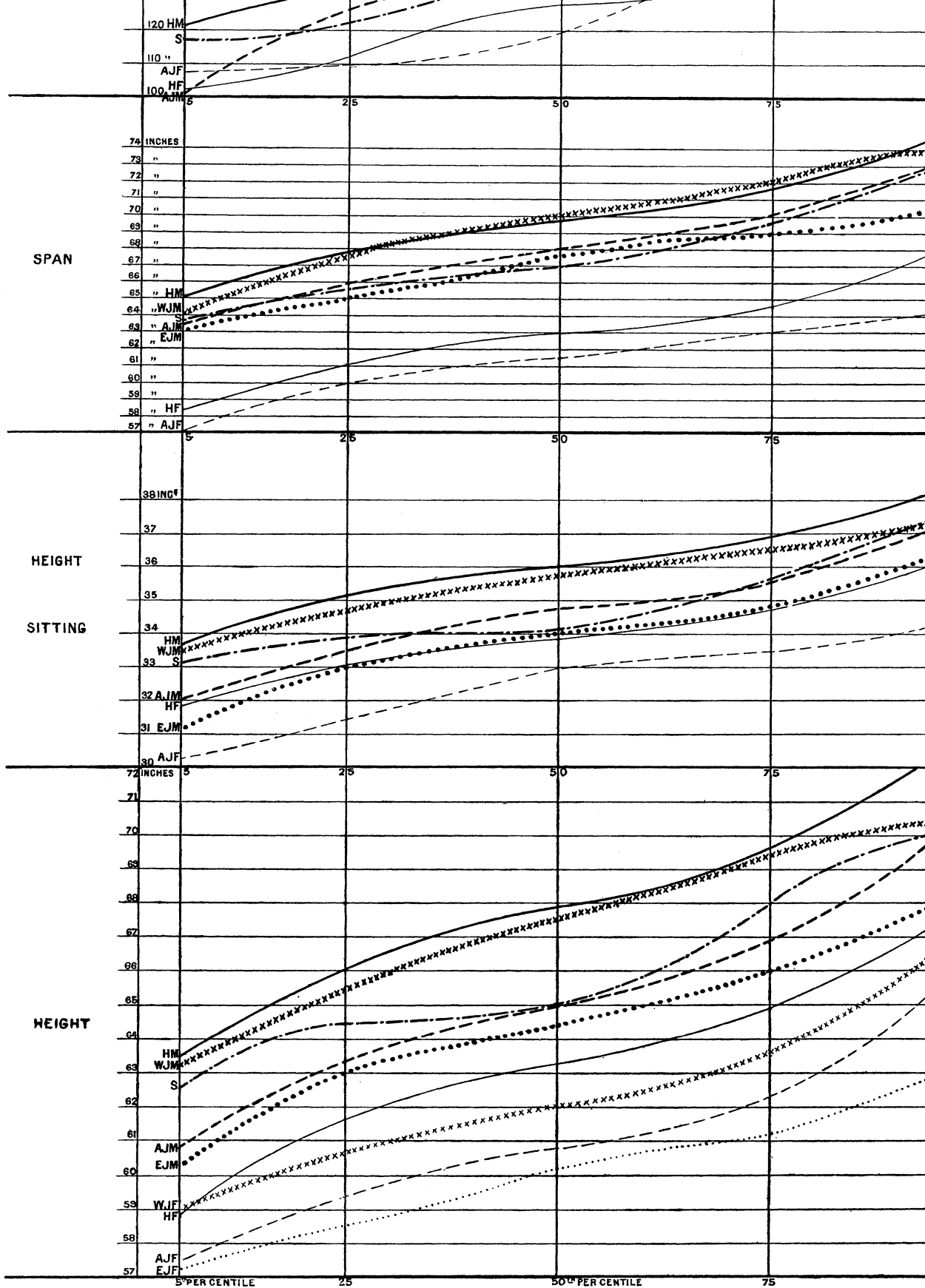
Mr. JACOBS in reply mentioned that very few, if any, Jewish visitors of the Health Exhibition visited Mr. Galton's Laboratory. It was possible that the class of Jews which had been termed in the paper "West End Jews" were slightly better nurtured than the average visitor of the Exhibition.



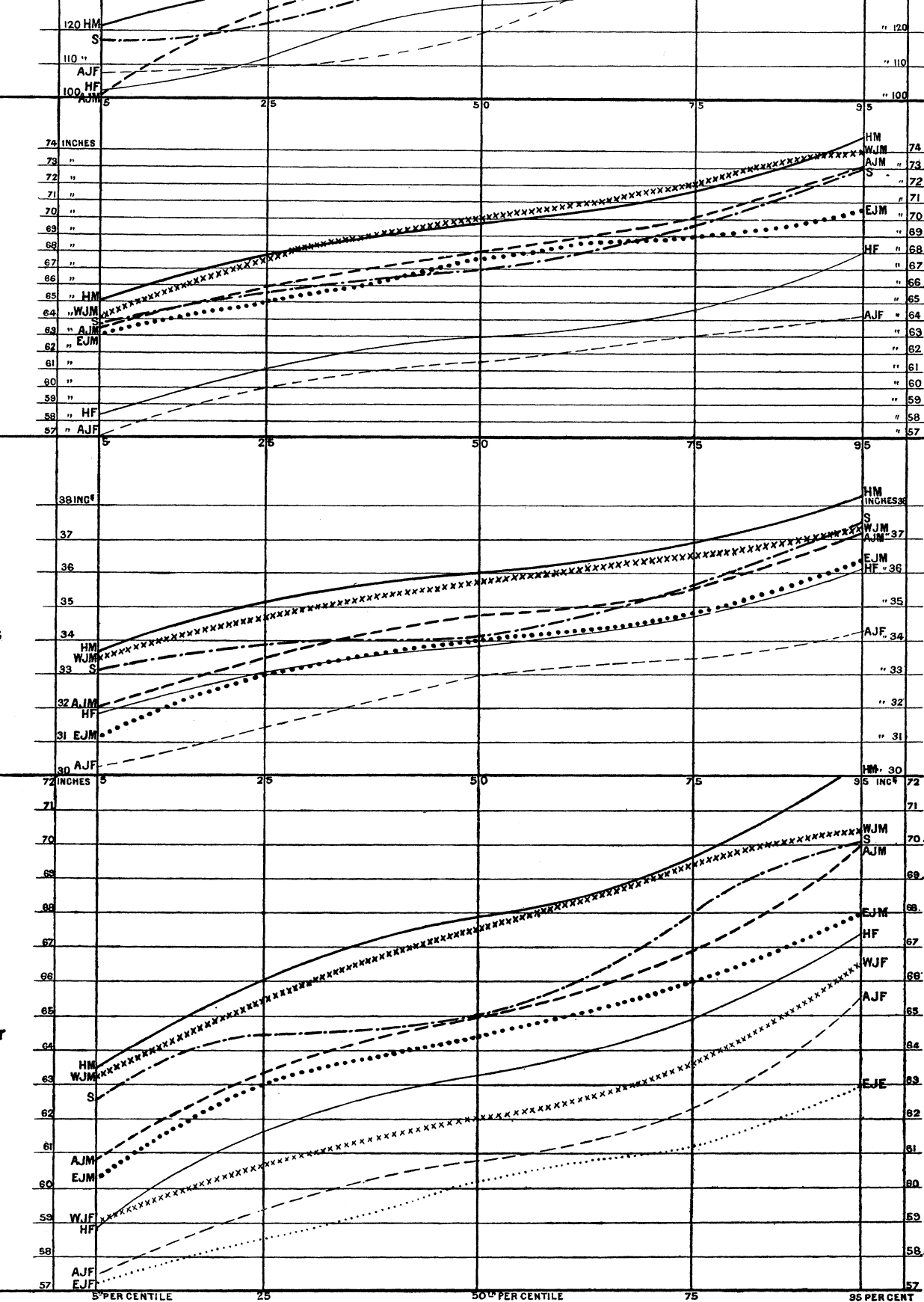








GRAPHIC REPRESENTATION OF THE RESULTS OF MESSRS. JACOBS AND SPIELMAN'S MEASUREMENTS OF ENGLISH JEWS COMPARED
MR. GALTON'S MEASUREMENTS AT THE HEALTH EXHIBITION.



REPRESENTATION OF THE RESULTS OF MESSRS. JACOBS AND SPIELMAN'S MEASUREMENTS OF ENGLISH JEWS COMPARED WITH MR. GALTON'S MEASUREMENTS AT THE HEALTH EXHIBITION.