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THE FREQUENCY OF CONTRACTED PELVES IN THE FIRST THOUSAND WOMEN DELIVERED IN THE OBSTETRICAL DEPARTMENT OF THE JOHNS HOPKINS HOSPITAL

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THE FREQUENCY OF CONTRACTED PELVES IN THE FIRST THOUSAND WOMEN DELIVERED IN THE OBSTETRICAL DEPARTMENT OF THE JOHNS HOPKINS HOSPITAL.*

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In 1891, in an article entitled Pelvimetry for the General Practitioner, I directed attention to the slight importance which was attached to pelvimetry in this country, and urged that it be made an integral part of the examination of every pregnant and parturient woman, and stated: "That any one who will regularly pursue this course will be amazed to find how many contracted pelves exist, and will then be able to explain in a rational way many difficult cases of transverse and other presentations, which previously he merely turned or delivered by forceps or cranioclast, and whose abnormal presentation or mechanism he ascribed to some freak of nature, rather than to a rational and sufficient cause."

Even since then I have taken an especial interest in the subject, and when the Obstetrical Department of the Johns Hopkins Hospital was opened, I made pelvimetry as important

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a part of the obstetrical examination as the determination of the position and presentation of the child.

In 1896, I reported to the Medical and Chirurgical Faculty of Maryland, the results obtained by pelvimetry in the first 100 cases which came into our hands, and stated that contracted pelves occurred in 15 per cent. of them; and the following year my assistant, Dr. Dobbin, read a report based upon 350 cases, in which he found 11.45 per cent. of contracted pelves.

Several months ago, we completed the delivery of our first 1,000 cases, and this evening I desire to report the frequency with which we observed contracted pelves in this number of cases.

As yet there is absolutely no agreement among the authors as to the frequency of contracted pelves, neither in this country nor abroad, as is demonstrated by the statistics of Fancourt Barnes of London, and Franke of Leopold's Clinic in Dresden, the former observing them in 0.5 per cent., and the latter in 24.3 per cent. of his cases.

The divergence in the statements of the various authors can probably best be shown by considering separately the work which has been done in the various countries. The following table showing the percentage of cases in which the various German observers noted contracted pelves:

Leopold	Dresden,	in	2,512	cases	observed	24.3	%	contracted pelves.
Schwartz	"	"	463	"	"	22	"	" "
Weidenmüller,	Marburg,	"	3,224	"	"	18.7	"	" "
Müller	Berne,	"	1,177	"	"	16	"	" "
Litzmann	Kiel,	"	1,000	"	"	14.9	"	" "
Köttgen	Bonn,	"	2,000	"	"	13.45	"	" "
Michaelis	Kiel,	"	1,000	"	"	13	"	" "
Dohrn	Königsberg,	"	——	"	"	12.18	"	" "
Fuchs	Erlangen,	"	1,766	"	"	11.43	"	" "
Pfund	Munich,	"	1,199	"	"	9.5	"	" "
Schatz	Rostock,	"	——	"	"	9	"	" "
Heinsius	Breslan,	"	1,641	"	"	8.5	"	" "
Gönner	Basel,	"	2,433	"	"	7.9	"	" "

It is therefore apparent that the percentage of contracted pelves in Germany varies between 24.3 and 7.9; or in other words, every fourth to every thirteenth German woman has a contracted pelves, according to the statistics of the various clinics.

In the Austrian Empire, on the other hand, contracted pelves would appear to occur less frequently, as:

Pawlik, in Austrian Empire, in.....	29,615	cases observed,	7.8 %
Ludwig and Savor, in Vienna, in...	50,621	" "	3.83 "
Knapp, in Prag, in.....	4,289	" "	2.44 "
Braun and Hersfeid, in Vienna, in..	——	" "	2.15 "

And it would therefore appear that the highest percentage of contracted pelves in Austria is slightly less than is noted in the German Clinic, which offers the lowest percentage of such cases.

In France, contracted pelves appear to occur less frequently than in Germany, and more frequently than in the Austrian Empire, as is shown by the following figures from Paris, where Tarnier (Bonnaire) observed 16 per cent. of contracted pelves in 715 cases, Budin 8 per cent. in 7,687, and Pinard about 5 per cent. in several thousand cases.

The figures from Russia apparently indicate that contracted pelves are comparatively rare among the Slavonic races, as:

Buchhloz, of Dorpat, observed them in 5.1 per cent., and Hugenberger, of St. Petersburg, in 1.2 per cent. of his cases.

In America we find very few specific statements as to the frequency of contracted pelves, but in most of the text-books we find the assertion that contracted pelves are very rare in this country. Lusk, for example, remarks that they occur very rarely in the native-born American women, while rachitis and osteomalacia are absolutely unknown. Hirst, on the other hand, states that their frequency has been markedly under-estimated, and that no one who practices obstetrics can fail to observe a certain number of such cases.

The only statistical statements which I have been able to find are the following:

Dobbin, Baltimore, in.....	350	cases,	11.45%
Crossen. St. Louis, in.....	800	"	7 "
Reynolds, Boston, in.....	2,127	"	1.13 "
Flint, New York, in.....	10,233	"	1.42 "

From these figures, it would accordingly appear that contracted pelves are very rare in America, or occur comparatively frequently, according as the statistics are collected in one city or another.

The question, then, naturally arises as to how we can account for these differences, and to it several answers may be given. In the first place, the difference may be due to a lack of unanimity as to what constitutes a contracted pelvis. Certain authors recognizing as contracted only those pelves which are so deformed as to offer a marked obstacle to the passage of the child, and which necessitate operative interference; while others designate as contracted any pelvis which is so shortened in one or more diameters as to affect the mechanism of labor, without necessarily retarding the birth of the child. Reynolds' statistics are based upon the former, and Dobbin's upon the latter conception.

The difference may also be explained by variations in the methods of mensuration. Certain authors, as Leopold, for example, obtain their high percentages by depending upon the external measurements, while others base their statements only upon the direct measurement of the diagonal conjugate.

Another source of difference may be found in the manner in which the cases are chosen for mensuration. Certain authors measure every case which comes into their hands, others the majority of their cases; while still others, as Reynolds, for example, measure only those cases which require operative interference.

We must also consider the possibility of contracted pelves being more frequent in one country than another, and even in certain portions of the same country. The correctness of this supposition is apparently borne out by the tables of frequency which we have already adduced for the various countries, and it is well known that the Clinics of Dresden and Liepzig offer a greater percentage of contracted pelves than the North German Clinics; and it is generally stated that the women of Holstein have the most normal pelves in Europe.

Our conception of a contracted pelvis is the one which was introduced by Michaelis and Litzmann, and like them we consider a pelvis as contracted when one or more of its diameters is so shortened as to lead to an abnormality in the mechanism of labor, without necessarily retarding the birth of the child. Litzmann considered as contracted all flat pelves having a conjugata vera of 9.5 cm. or less, and all generally contracted pelves having a conjugata vera of 10 cm. or less.

As the conjugata vera is estimated from the conjugata diagonalis by the reduction of 1.5 to 2 cm. according to the height and inclination of the symphysis pubis, and as the amount to be deducted is a matter of individual judgment, and varies with the observer, we have thought it best to classify our cases according to the length of the conjugata diagonalis, instead of the vera, and have considered as contracted the flat pelves which present a conjugata diagonalis of 11 cm. or less, and the generally contracted pelves having a conjugata diagonalis of 11.5 cm. or less. If one subtracts 1.5 cm. from the the conjugata diagonalis to estimate the vera, our limits would correspond exactly with those of Litzmann; while, if 2 cm. were subtracted, they would be slightly lower than his.

In all of our cases the usual external measurements were made with a Martin pelvimeter, and in all but a few the diagonal conjugate was measured with the finger, and in a few cases Skutsch's pelvimeter was used. In the out-patient department, no matter what the external measurements may be, the determination of the length of the conjugata diagonalis forms an integral part of the examination of every pregnant woman. In the hospital, on the other hand, it is not measured before labor, unless the external measurements indicate the possibility of pelvic deformity; but it is measured in every case at the time of labor, if the head has not descended too deeply into the pelvis; otherwise it is measured at the final examination before the patient leaves the hospital.

With increased experience in pelvimetry, I have learned to place less and less reliance upon external pelvic mensuration as a means of ascertaining the degree of pelvic contraction, and I believe that its only value is to indicate the possibility of the existence of pelvic deformity, and to give us a clue to the variety of pelvis with which we have to deal.

This observation is especially true of colored women, and I have no hesitancy in saying that in at least 50 per cent. of the colored women, which I have examined, the external pelvic measurements differ markedly from the normal, while the internal measurements are normal or only slightly altered. Not infrequently I have found a pelvis to be practically normal upon internal examination when all of its transverse external measurements were shortened and its Baudelocque diameter reduced to 17 cm. or less.

Following these principles, we have measured the pelves of 1,000 women, 650 of whom were delivered in the out-patient department and the remainder in the Hospital, and have found that 131 of them (13.1 per cent.) possessed contracted pelvis. (See large tables at end of article). In this number, we found

79 generally contracted pelves	7.9 %
25 simple flat pelves	2.5 "
20 rachitic	2 "
7 irregular forms of contraction	7 "

Among the irregular forms, we observed 4 oblique pelves, 3 due to coxalgia and 1 to a unilateral congenital dislocation of the hip; 1 flat pelvis due to double congenital dislocation of the hips; 1 osteomalactic and 1 spondylolysthetic pelvis. (See table iv.).

While the majority of the pelves observed presented only moderate degrees of contraction, there were 12 cases in the series which had a conjugata vera of 8 cm. or less, 5 of this number being rachitic (see table iii.), 5 generally contracted pelves (see table i.), and one case each of osteomalacia and spondolysthesis (see table iv.). Two of these cases were delivered by symphyseotomy, and at least two, and probably three, of the others would have been delivered by Caesarian section had we seen them before the death of the child.

When we consider the results obtained in the treatment of our 131 cases, we find that 69.4 per cent. of the women had spontaneous and 35.1 per cent. operative labors; 82.44 per cent. of the children being born alive and 17.56 per cent. dead. Three of the mothers died, but only in one instance could the death be attributed to our intervention, and this was a case of infection after symphyseotomy. The other two deaths were in the out-patient department, but neither of them could be attributed to us, as we did not see the first case until she had been in labor for several days and was profoundly infected with the bacillus ærogenes capsulatus and streptococcus, and in a dying condition when first seen; while the other death was due to rupture of the uterus, which occurred before we saw the patient, who refused all treatment, except the delivery of the child, whose head was on the perineum. Our maternal mor-

tality was therefore only 0.76 per cent. I shall not consider the details of the various operations, as they will be reported separately by Dr. Dobbin in the next number of OBSTETRICS.

TABLE I.

GENERALLY CONTRACTED PELVES.	No. of Cases.	White.	Black.	Spontaneous.	Operative, White.	Operative, Black.	Forceps.	Extraction.	Version.	Distinctive, Op.	Symphyseotomy.	Live Child.	Dead Child.	Dead Mother.
Conjugata diagonalis 11.5 cm. vera 9.5 cm.....	13	3	10	10	1	2	2	1	....	....	....	11	2	1
Conjugata diagonalis 11.25 cm., vera 9.25 cm.....	8	2	6	6	2	....	....	1	1	....	....	6	2	....
Conjugata diagonalis 11 cm vera 9 cm.....	19	3	16	13	2	4	4	....	1	1	....	16	3	....
Conjugata diagonalis 10.75 cm., vera 8.75 cm.....	1	....	1	1	....	....	....	....	....	....	....	1	....	....
Conjugata diagonalis 10.50 cm., vera 8.25 cm.....	9	1	8	7	1	1	....	....	1	1	....	5	4	1
Conjugata diagonalis 10.25 cm., vera 8.25 cm.....	2	1	1	2	....	....	....	....	....	....	....	2	....	....
Conjugata diagonalis 10 cm vera, 8 cm.....	4	1	3	1	....	3	2	....	1	....	....	3	1	....
Conjugata diagonalis 9 cm vera 7 cm.....	1	....	1	....	....	1	1	....	....	....	....	1	....	....
Conjugata diagonalis not measured.....	22	3	19	21	1	....	1	....	....	....	....	19	3	....
Total.....	79	14	65	61	7	11	10	2	4	2	....	64	15	2

TABLE II.

SIMPLE FLAT PELVES.	No. of Cases.	White.	Black.	Spontaneous.	Operative, White.	Operative, Black.	Forceps.	Extraction.	Version.	Distinctive Op.	Symphyseotomy.	Live Child.	Dead Child.	Dead Mother.
Conjugata diagonalis 11 cm., 9 cm.....	13	7	6	8	5	....	1	1	3	....	....	12	1	....
Conjugata diagonalis 10.75 cm., vera 8.75 cm.....	1	1	....	1	....	....	....	....	....	....	....	1	....	....
Conjugata diagonalis 10.50 cm., vera 8.50 cm.....	8	6	2	6	2	....	....	....	2	....	....	8	....	....
Conjugata diagonalis 10.25 cm., vera 8.25.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Conjugata diagonalis 10 cm., vera 8 cm.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Conjugata diagonalis not measured.....	3	2	1	1	1	1	2	....	....	....	....	3	....	....
Total.....	25	16	9	16	8	1	3	1	5	....	....	24	1	....

TABLE III.

Rachitic Pelves.	No. of Cases.	White.	Black.	Spontaneous.	Operative, White.	Operative, Black.	Forceps.	Extraction.	Version.	Distinctive Op.	Symphyseotomy.	Live Child.	Dead Child.	Dead Mother.
Conjugata diagonalis 11 cm., vera 9 cm	10	2	8	2	2	6	5	2	1	....	....	9	1	....
Conjugata diagonalis 10.75 cm., vera 8.75 cm	1	....	1	1	....	....	....	....	....	....	....	1	....	....
Conjugata diagonalis 10.50 cm., vera 8.50 cm	1	....	1	1	....	....	....	....	....	....	....	1	....	....
Conjugata diagonalis 10.25 cm., vera 8.25 cm	2	....	2	....	....	2	1	....	1	....	....	....	(2)	....
Conjugata diagonalis 10 cm., vera 8 cm	2	....	2	1	....	1	....	....	1	....	....	1	1	....
Conjugata diagonalis 9.75 cm., vera 7.75 cm	1	....	1	....	....	1	1	....	....	....	....	1	....	....
Conjugata diagonalis 9.50 cm., vera 7.50 cm	1	1	....	....	1	....	....	....	....	1	....	....	1	....
Conjugata diagonalis 9.25 cm., vera 7.25 cm	1	....	1	....	....	1	....	....	....	....	1	1	....	....
Conjugata diagonalis 9 cm., vera 7 cm	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Conjugata diagonalis not measured	1	....	1	1	....	....	....	....	....	....	....	1	....	....
Total	20	3	17	6	3	11	7	2	3	1	1	15	5	....

TABLE IV.

Rarer Forms of Contracted Pelves.	No. of Cases.	White.	Black.	Spontaneous.	Operative, White.	Operative, Black.	Forceps.	Extraction.	Version.	Distinctive Op.	Symphyseotomy.	Live Child.	Dead Child.	Dead Mother.
Osteomalacia	1	1	....	....	1	....	....	....	....	1	....	....	1	....
Obliquely contracted, coxalgic	3	3	....	....	3	....	1	....	2	....	....	2	1	....
Obliquely contracted, congenital contraction of R. hip	1	....	1	1	....	....	....	....	....	....	....	1	....	....
Flat pelvis, from congenital dislocation of both hips	1	1	....	1	....	....	....	....	....	....	....	1	....	....
Spondylolisthesis	1	....	1	....	....	1	....	....	....	....	1	1	....	....
Total	7	5	2	2	4	1	1	....	2	1	1	5	2	....

Just after the appearance of my first paper on contracted pelves, in which I stated that they occurred in 15 per cent. of our first 100 cases, Dr. Edward Reynolds, of Boston, wrote me that he believed that the great difference between his figures and mine (1.13 and 15 per cent.) was due to the presence

of a large number of colored patients in our service, which were entirely absent from his.

In view of this suggestion, it will be interesting to study our cases from this point of view, and determine whether any difference can be observed in the frequency of contracted pelves in the white and black women, whom we have delivered.

In our 1,000 cases we delivered 531 white and 469 black women, and on analyzing our 131 cases of contracted pelves we find that 38 of them occurred in white and 93 in black women, giving a frequency of 7.15 per cent. in white women and 19.83 per cent. in black women.

In other words, we find that contracted pelves occur 2.77 times more frequently in the black than in the white women, whom we have observed. These figures apparently prove the correctness of Reynolds' supposition; but when we examine them more closely we find that there are 7.15 per cent. of contracted pelves in our white women, compared to 1.13 per cent. in his material. It appears, however, that he measured only his operative cases, and estimated, had he measured all of his cases, that he would have had a percentage of 6.8, which approximates very closely our figures for white women.

Admitting the correctness of Reynolds' estimate, the only difference between our observations and his upon white women would lie in the fact that the vast majority of his cases were foreign-born, compared to about 20 per cent. of our cases; and it would, therefore, appear that contracted pelves are more frequent among the native-born white women of Baltimore than of Boston.

Having ascertained this marked difference in the frequency of contracted pelves in the black and white races, it will be interesting to ascertain if there is any difference in the varieties of pelves and the degree of contraction in the two races. On analyzing the pelves which present a conjugata vera of 8 cm. or less, we find that only three of them occur in white and the remaining nine in colored women, thus apparently demonstrating the occurrence of more marked degrees of contraction in the black race (see tables i., ii., iii.).

A glance at table iv. will show that there is a marked difference in the forms of contracted pelves observed in the two races, the simple flat being the most frequent and the

rachitic pelvis the least frequent in white women; while in black women the generally contracted pelvis is the most frequent and the rachitic pelvis second in frequency.

TABLE V.

Variety of Pelvis.	No. in 1,000 cases.	No. in 231 whites.	No. in 469 Blacks.	Per cent. in 1,000 cases.	Per cent. in 231 whites.	Per cent. in 469 Blacks.
Generally contracted.....	79	14	62	7.9	2.63	13.86
Simple flat.....	22	16	9	2.2	3.01	1.91
Rachitic.....	20	3	17	2.	0.26	3.63
Rarer forms.....	7	2	2	0.7	0.94	0.42
Total.....	131	38	93	13.1	7.14	19.83

The predominance of the generally contracted pelvis in colored women (see tables i. and v.), among whom it was 5.27 times more frequent than in white women, is not what one would expect *á priori*, as it is generally stated that it is the form of contracted pelvis most frequently observed in native-born white women. And it is well known that the rachitis is extremely common among the colored people of the South; and, on first thought, one would expect that the rachitic pelvis would be the variety most frequently observed among them. Our tables, however, while showing that the rachitic pelvis does occur quite frequently among them, demonstrate that it occurs four times less frequently than the generally contracted pelvis.

The cause for this marked predominance of the generally contracted pelves in the black race is probably to be found in their poor physical condition, many of them being poorly developed and undersized, and it is a well known fact that they possess less power of resistance than the white race, and fall an easier prey to tuberculosis and other chronic diseases. And I do not think that we shall go far wrong in considering the marked frequency of contracted pelves among them as a sign of degeneration, just as Wiedow has done in Switzerland.

The general lack of development in colored women is also shown by the frequent and marked divergence of their

external pelvic measurements from the normal; and we have already pointed out that they were below the standard in at least 50 per cent. of our cases, so that it is only by internal mensuration that we can diagnose contracted pelves among them. From an obstetrical point of view, this lack of development is, to a large extent, compensated for by the smaller size of the children, so that many spontaneous labors occur in pelves through which the birth of a fair sized child would be possible only after operative interference. We accordingly find that operations were performed twice as frequently in our white patients, 58 per cent. of whom were delivered by operative means, as compared with 26 per cent. of the colored women.

Turning to the white women, and comparing our results with those of other American observers, we note in the first place that they completely contradict the statements which Lusk made at the International Gynæcological and Obstetrical Congress in Geneva in 1896, when he stated that contracted pelves are almost unknown in native-born Americans, and that rachitis and osteomalacia never occur. We found 7.15 per cent. of contracted pelves in our white women, and observed three cases of rachitis and one of osteomalacia in women who were born in Baltimore.

On glancing at Table v. we note that the variety of pelvis which we observed most frequently in the white women was the simple flat. This is in accordance with the usual German order of frequency, but does not correspond to the current belief in this country, as it is generally stated that the generally contracted pelvis is the variety most frequently observed in native-born Americans.

When we compare our statistics with those of other American observers, we find that there is almost complete accord between our figures and those of Crossen and Reynolds, the former having observed contracted pelves in 7 per cent. and the latter in 6.8 per cent. of his cases The discordant note, however, is struck by Flint's statistics, in which he found only 1.42 per cent. of contracted pelves in 10,223 women delivered by the Society of the Lying-in Hospital in New York. Flint's statistics are in marked contrast to those of other American observers, and it is interesting to inquire if any explanation can be found for the difference. On glancing over his statistics,

we find that only 9 per cent. of his patients were American, born; 75 per cent. were Russians and the balance Poles and Bohemians, with a sprinkling of Germans and Negros.

It would appear from the statistics which we have already adduced, that the Russian women have very good pelves, as Hugenberger found only 1.2 of contracted pelves among them, and the same may be said of the Bohemians, as Knapp found only 2.44 of contracted pelves in the mixed German and Bohemian population of Prag. These figures correspond very closely to those of Flint, and it would appear to us that his statistics cannot be said to apply to American women at all, but rather to the Slavonic races.

(Discrepancies in the case numbers employed in the present article and that of Dr. Dobbin are due to the fact that in his article the current Dispensary numbers were used, whether the patient was delivered or not; while in the present article, the out-patient cases are numbered in the order in which they were delivered, and the Hospital cases according to the current obstetrical numbers).

CONCLUSIONS.

1. In our material, the frequency of contracted pelves (13.1 per cent.) correspond very closely with the general average of frequency observed in Germany.

2. This is due, in large part, to the presence of a large black population in Baltimore, 469 out of our 1,000 cases being colored women.

3. Contracted pelves are 2.77 times more frequent in black than in white women, and occur in 19.83 per cent. of the former and 7.14 per cent. of the latter.

4. The statistics of Reynolds Crossen, and myself indicate that contracted pelves are observed in about 7 per cent. of the white women of this country, or about once in every fourteenth case.

5. Contracted pelves, accordingly occur in our white women about as frequently as in many German clinics, notably Rostock, Breslau and Basel.

6. And occur quite as frequently as in Paris (Pinard and Budin) and more frequently than in Vienna.

7. As every fourteenth white and every fifth colored

woman possesses a contracted pelvis, the necessity for routine pelvimetry becomes apparent.

LITERATURE.

1. BARNES.—International Gynæcological Congress, Geneva, 1896. *Cent. f. Gyn., 1896, p. 1089.*
2. BRAUN and HERZFELD.—Der Kaiserschnitt, etc. *Wien, 1888.*
3. BUCHHOLZ.—Ueber ein Lustrum klinischer Geburtshulfe. *D. I. Dorpat, 1893.*
4. BUDIN.—Statistiques de la Maternité de Paris. *L'Obstetrique iii., p. 134, 1896.*
5. CROSSEN.—Partial report of 800 cases of labor. *Am. Gyn. & Obst. Journ., xiii., p. 53, 1898.*
6. DOBBIN.—The frequency of contracted pelvis in the obstetrical service of the John Hopkins Hospital. *Am. J. Obst., xxxvi., pp. 145-63, 1897.*
7. DOHRN.—Internat. Gyn. Congress, Geneva, 1896. *Cent. f. Gyn., 1896, p. 1091.*
8. FLINT.—Deformed Pelves. *Report of the Society of the Lying-in Hospital, New York, 1887, pp. 258-71.*
9. FRANK.—Enges Becken und spontane Geburt. *Leopold's Arbiten, ii., pp. 29-47, 1895.*
10. FUCHS.—Statistik der in den letzten 10 Jahren in der Erlanger Universitats-Frauenklinik vorgekommenen engen Becken. *D. I. Wurzburg, 1899.*
11. GONNER.—Zur Statistik des engen Beckens. *Zeit f. Geb. u. Gyn., vii., p. 314, 1882.*
12. HEINSIUS.—Die Geburten bei engen Becken in den Jahren, 1894-97. *D. I. Breslau, 1898.*
13. HUGENBERGER.—*Peterbnrger Med. Wochenschrift, N. F., iii., 1872.*
14. KNAPP.—Bericht uber 105 Geburten bei engen Becken aus den Jahren, 1881-95. *Arch. f. Gyn., xl., pp. 489-586, 1886.*
15 KOTTGEN.—Zur Statistik des engen Beckens. *D. I. Bonn, 1895.*
16. LITZMANN.—Die Formen des Becks, 1861.
17. ———. Die Geburt bei engen Becken, 1884.
18. LUDWIG and SAVOR.—Klin. Bericht uber die Geburten bei engen Becken in den Zeitdrum, 1878-1892. Bericht aus der II. Geb. Gyn. Klinik in Wein. R. Chrobak, 1897, pp. 120-349.
19. LUSK.—The Science and Art of Midwifery. 4th ed., 1895.
20. ———. International Gyn. Congress, Geneva, 1896. *Cent. f. Gyn. 1896, p. 1090.*
21. MICHEALIS.—Das enge Becken, 1851.
22. Zur Frequez und Aetiologie des allgemeinen verengten Beckens. *Arch. f. Gyn., xvi., p. 155, 1880.*
23. PAWLIK.—Internat- Gyn. Congress, Geneva, 1896. *Cent. f. Gyn., 1896, p. 1090.*
24. PINARD.—De la symphyseotomie a la clinique Baudelocque pendant l'annee, 1892. *Annales de Gyn. et d'Obstet., xlv., p. 1, 1896. Also reports for 1896, p. 2, 1897.*
25. PFUND. *Aerztl. Intelligenzblatt, xxxii., p. 247, '85.*
26. REYNOLDS.—The frequency of contracted pelves. *Trans. Am. Gyn. Society, '90.*
27. SCHATZ.—Ueber das enge Becken in Norddeutschland. *Cent. f. Gyn., '95, p. 1057.*
28. SCHWARTZ.—Die Haufigkeit des engen Beckens. *Monats. f. Geburtkunde, xxvi. p. 437, '65.*
29. TARNIER and BUDIN.—*Traite de l'art des accouchements, iii., p. 20, '98.*
30. WIEDENMULLER.—Zur Statistik des engen Beckens. *D. I. Marburg, '95.*
31. WIEDOW.—Das deforme Becken ein Degenerations zeichen. *Vern. der deutschen. Gesell. fur Gyn., IV. Congress, 92, pp. 220-42.*
32. WILLIAMS.—Pelvimetry for the General Practitioner. *Medical News, March 21, '91.*
33. ———. The frequency of contracted pelves in Baltimore. *Johns Hopkins Bulletin, August, '96.*

COMPLETE TABLES UPON WHICH THE ARTICLE IS BASED.—I. Generally Contracted Pelves, Nineteen Cases.

(In the first 61 Cases both Internal and External Measurements were made, in the last 18 only the External Measurements.)

SERIES NO.	NAME, RACE, NO.	PARA AND AGE.	PREVIOUS HISTORY AND LABORS.	PELVIC MEASUREMENTS.	POSITION	SPONTANEOUS LABOR.	INSTRUMENTAL LABOR.	DURATION OF LABOR.	PUERPERIUM.	SEX AND WEIGHT.	RESULT.	HEAD MEASUREMENTS.	REMARKS.
1	A. C. Black, 15, O.A.P.	I-para, no mis. 20	Negative.	23.5 26 28.5 18.5 11	L.O.I.A.	Spontaneous, second stage long and tedious	.....	13 h, 12 m	Normal	Male, 6 lbs. 8 oz.	Living	O.F. 12.5 S.O.B. 8.75 Bip. 8.5 Bit. 8	Childs head moulded so as to make it seem very long in occipit-mental diamter and very short S.O.B.
2	P. A. Polish, 56, O.P.	IV-para, 2 mis. 2	Abdominal operation done in Austria about one year ago. No particulars, could only speak Polish.	22.5 25 28 17 10.5	.....	.....	In labor 2 days when first seen. Uterus tetanically contracted and of bullet shape. Fundus at umbilicus. Child large. Arrest of labor pains and absence of fetal heart. Par vaginum. L.O.I.T. Head at pelvic brim. Overlapping of cranial bones. Extensive caput succedaneum. Physometra. Delivered by very difficult craniotomy and extraction with blunt hook. Profoundly septic.	2 days	Died on 2d day from an infection with bacillus Aerogenes capsulatus.	Male, 2.900 grms. without brain.	Dead	.....	
3	C.McP. Black, 140, O.P.	III-para, 1 mis. 25	Normal labors.	23.5 25 28 18.5 11.5	L.O.I.A.	Spontaneous	.....	.....	Slightly febrile.	Male, 5 lbs. 6 oz.	Living	O.F. 10 S.O.B. 9 Bip. 9 Bit. 7.5	
4	E. S. Black, 151, O.P.	IV-para, no mis. 28	No history of difficult labors.	22.5 24 29 18 11.5	Twins, L.O.I.A. L.S.I.A.	.....	First child L.O.I.A. delivered by low forceps. Second child L.S.I.A. delivered by expressio fetus and Prague method of extracting the aftercoming head.	14½ hours	Normal.	Both male, 1st, 4 lbs.; 2d 3 lbs. 6 oz.	Both living.	O.F. 10.5—9.25 S.O.B. 8.5—8.75 Bip. 7.75—8 Bit. 7—6.75	
	I. C. Black, 166, O.P.	I-para, no mis. 19	History negative.	22.5 24 27 19 11	R.O.I.P.	.....	Labor very long and difficult. Both mother and child in bad condition when delivered. Delivery by difficult forceps with severe laceration of perineum.	34 hours	Normal. Perineum per primam.	Male, 8 lbs. 9 oz.	Living	O.F. 12 S.O.B. 9.75 Bip. 9.5 Bit. 7.5	
6	A. T. Black, 209, O.P.	III-para 3 mis. 29	First labor difficult, second normal. (First child killed to facilitate labor.)	20.5 22 26.5 17.5 10.5	L.O.I.A.	Spontaneous, macerated fetus.	.....	12 hours	Normal.	Male, 6 lbs.	.....	O.F. 12 S.O.B. (?) Bip. 7 Bit. 5 Circum. 30 cm.	
7	C. D. Black, 210, O.P.	XII-para no mis. 35	All labors difficult.	22.5 25 28.5 18.5 Conj. vera 9.75	L.O.I.A.	.....	Uterus ruptured before we saw case. Forceps to head on perineum. Manual removal of placenta. Laparotomy refused.	.....	Died on 7th day peritonitis	Male 12 lbs.	.....	O.F. 13 S.O.B. 10 ? Bip. 9 Bit. 7 Circum. 35 cm.	

SERIES NO.	NAME, RACE, NO.	PARA AND AGE.	PREVIOUS HISTORY AND LABORS.	PELVIC MEASUREMENTS.	POSITION	SPONTANEOUS LABOR.	INSTRUMENTAL LABOR.	DURATION OF LABOR.	PRERPERIUM.	SEX AND WEIGHT.	RESULT.	HEAD MEASURAMENTS.	REMARKS.
8	E.L.K. Black, 216, O.P.	V-para 2 mis. 36	All labors severe. No instruments.	23.5 24 29.5 18 11	R.O.I.P.	.....	Low forceps, pains weak and ineffective.	18 h, 40 m; 2d stage, 2 50-60 h.	Normal	Male, 8½ lb	Living	O.F. 11.5 S.O.B. 9.75 Bip. 8.5 Bit. 7.75	
9	I. F. Black, 286, O.P.	V-para 1 mis. 23	Labors slow, no instruments used.	22 24.5 28.5 15.5 10	R.O.I.A.	Spontaneous	....	21 hours	Normal	Male, 6 lbs. 12 oz.	Living	O.F. 11 S.O.B. 9 Bip. 8.5 Bit. 7.25 Circum. 30 cm.	
10	S. M. Black, 295, O.P.	I-para, no mis. 20	Negative	21.5 23 26.5 16.5 11	R.O.I.A.	Spontaneous, child deliver'd before doctor arrived.	.....	12 hours	.....	Male, 5 lbs. 8 oz.	Dead	O.F. 10.5 S.O.B. 8 Bip. 8.5 Bit. 8	Born with caul over its face, not removed by persons present.
11	S. D. C. Black, 321, O.P.	I-para, no mis. 17	Negative	23.5 24 27 17 10.5	R.O.I.A.	Spontaneous	.....	3 hours	Normal	Female, 5¼ lbs.	Living	O.F. 10 S.O.B. 7.5 Bip. 8.5 Bit. 7.5 Circum. 31.	
12	E. C. Black, 332, O.P.	II-para, no mis. 19	First labor difficult, but normal.	24 25.5 28 18 11.5	L.O.I.A.	Spontaneous	.....	6 hours	Normal	Female, 6 lbs. 8 oz.	Living	O.F. 11.5 S.O.B. 8.75 Bip. 9.25 Bit. 7.75	
13	E. P. Black, 344, O.P.	III-para, no mis. 24	Previous labor non-instrumental.	22.25 24.5 28.5 17.5 11.25	.....	Spontaneous, head remain'd above pelvic brim until last two pains.	.....	21½ hours	Febrile — 107. Streptoco's infection. Delerium. Dischdg 22d day well.	Male, 7 lbs. 8 oz.	Living	O.F. 12 S.O.B. 9.5 Bip. 8 Bit. 7.5	
14	I. S. Black, 378, O.P.	I-para, no mis. 12	Negative	22.5 23.5 27.5 17.5 10.5	R.M.I.T.	.....	Version and extraction, Perineum torn.	23½ hours	Slighltly feb., but no signs of infection. Perineum healed per priman.	Male, 8 lbs.	.....	O.B. 11.5 S.O.B. 9.25 Bip. 9.5 Bit. 7.5 O.M. 12.5 Circum. 30.5	
15	M.B.B. White, 405, O.P.	III-para, no mis. 23	Previous labors long and difficult, but non-instrumental	24 27 29.5 17.5 11.5	L.O.I.A.	Very long and difficult, but spontaneous.	.....	26½ hours	Normal	Male, 8½ lbs.	Living	O.F. 12 S.O.B. 10.75 Bip. 29.5 Bit. 7.5 Circum. 35	
16	A. S. Black, 441, O.P.	I-para, no mis. 19	History negative	21.75 23.25 28.5 17.5 11.5	L.O.I.A.	Spontaneous	.....	48 hours	Normal	Female, 5¼ lbs.	Living	O.F. 9.5 S.O.B. 8.5 Bip. 7.75 Bit. 6.5 Circum. 27.5	
17	H. B. Black, 465, O.P.	XVI para XI mis. 41	Normal labors	23.5 25.5 30 19 11	R.O.I.T.	Spontaneous	....	2 hours	Normal	Female, 6 lbs.	Living	O.F. 11.25 S.O.B. 9.5 Bip. 8.25 Bit. 7.25	
18	L. T. White, 470, O.P.	III-para, no mis. 30	Long and difficult labors. Instruments used	25 26.5 29.5 18.25 11	R.O.I.A.	Spontaneous	.....	7 hours	Normal	Female, 7 lbs.	Living	O.F. 11 S.O.B. 10 Bip. 8.5 Bit. 7.5	

SERIES NO.	NAME RACE NO.	PARA AND AGE.	PREVIOUS HISTORY AND LABORS.	PELVIC MEASUREMENTS.	POSITION	SPONTANEOUS LABOR.	INSTRUMENTAL LABOR.	DURATION OF LABGR.	PUERPERIUM.	SEX AND WEIGHT.	RESULT.	HEAD MEASUREMENTS.	REMARKS.
19	M. B. Black, 499 O.P.	X-para, no mis. 34	All labors normal, none instrumental	22.5 25 29 19 11	.....	Spontaneous, delivered before doctor arrived	.....	40 hours	Normal	Male, 7¼ lbs.	Living	O.F. 12.25 S.O.B. 10 Bip. 8.75 Bit. 8. Circum. 30.	
20	S. J. Black, 509 O.P.	I-para, no mis. 18	Negative	25.5 25 29 18.5 11	L.O.I.A.	Spontaneous	.....	.....	Normal	Female, 7 lbs.	Living	O.F. 12 S.O.B. 11 Bip. 8.5 Bit. 7.5	
21	S. T. Black, 508 O.P.	XII-para no mif. 32	All labors normal	23 24.5 29.5 18.75 11.5	.....	Spontaneous, delivered before doctor arrived	.....	.....	Normal	Female, 7 lbs.	Living	O.F. 11.5 S.O.B. 8.25 Bip. 8.75 Bit. 7.75	
22	N. C. Black, 509 O.P.	III-para, 3 mis. 27	All labors normal	24.25 25 29.25 18.5 10.25	L.O.I.A.	Spontaneous	.....	.....	Normal	Female, 7 lbs. 8 oz.	Living	O.F. 11.75 S.O.B. 9.25 Bip. 9.75 Bit. 7.75	
23	G. W. Black, 517 O.P.	III-para, no mis. 20	All labors normal	19 20 26 15.75 10.5	L.O.I.A.	Spontaneous, macerated fetus.	.....	14⅓ hours	Normal	Male, weight ?	Macerated fetus	Not measured	
24	C. H. Black, 540 O.P.	III-para, no mis. 27	Labors long and difficult, but no forceps used	21 22.5 26.5 20 11	L.O.I.A.	Spontaneous, 2d stage slow, 5 hours	.....	12 hours	Normal	Male, 7 lbs. 8 oz.	Living	O.B. 11.25 S.O.B. 8.75 Bip. 9.5 Bit 7	
25	K. C. Black, 565 O.P.	I-para, no mis. 21	History negative	19.5 23 28.5 16.5 11.25	L.O.I.A.	Spontaneous	.....	24½ hours	Normal	Male, 6 lbs.	Living Marked caput succe'm	O.F. 11. S.O.B. 9.5 Bip. 9.5 Bit. 8 Circum. 31	
26	M. B., Black, 567 O.P.	VI-para, no mis. 23	Labors long and difficult non-instrumental	23.25 25.5 30.75 18.5 10.75	L.O.I.A.	Spontaneous	.....	18 hours	Normal	Male, 6 lbs. 8 oz.	Living	O.F. 11.5 S.O.B. 9 Bip. 9.5 Bit. 8	
27	C. H. Black, 575 O.P.	II-para, no mis. 21	Labor normal	21.5 23 28 17 11	.....	Spontaneous, delivered before doctor arrived.	.....	.....	Normal	Female, weight ?	Living	.....	
28	F. B. Black, 584 O.P.	II-para, no mis. 20	Labor normal	23.25 24.5 27.75 19 10.5	L.I.O.T.	Spontaneous	.....	12½ hours	Normal	Female, 7 lbs. 10 oz.	Living	O.F. 11.25 S.O.B. 9 Bip. 9. Bit. 8	
29	J. J. Black, 585 O.P.	II-para, no mis. 21	First labor lasted 54 hours, and was instrumental	23 24½ 28 18 10.5	R.O.I.A.	Spontaneous	.....	36 hours	Normal	Female, 8 lbs.	Living	O.F. 11 S.O.B. 9.5 Bip. 9 Bit. 8 Circum. 31	

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30	J. W. Black, 591 O.P.	VIIIpara no mis. 34	All labors easy; first two full term; others 7 months' babies	20 23 29.5 18 11.25	L.S.I.A.	Spontaneous, macerated fetus	.....	18½ hours	Normal	Male, weight ?	Dead, macerated	Not measured	
31	S. I. Black, 600 O.P.	VIIIpara no mis. ?	First child instruments used. All other labors easy	22.75 23.5 25.25 18 10.5	L.O.I.A.	Spontaneous	.....	17 hours	Temp. 103.7 at time of deliv'y and 102.2 on 2d day; otherwise puerp. normal	Female, 3.25 lbs.	Living	O.F. 9 S.O.B. 7.5 Bip. 6.75 Bit. 6.25 Circum. 24	Taken to hosp. and put into incubator on 5d day
32	C. H. Black, 616 O.P.	I-para, no mis. 20	Negative	23 24 27.5 17.5 Not taken	.....	Spontaneous, delivered before doctor arrived	.....	.....	Normal, except for one rise to 108 on 3d day	Male, 7 lbs. 8 oz.	Living	O. F. 11 S.O.B. 9 Bip. 9 Bit. 7.5	
33	E. G. Black, 618 O.P.	I-para, 1 mis. 29	Negative	21.75 24.5 30 18.5 10	.....	.....	After patient had been in labor 24 hours doctor was sent for. Found cervix 5 cm. in diameter and membranes ruptured. Head above brim. After waiting 6 hours, pains becoming weaker and no advance, two attempts were made to apply high forceps. Cord prolapsed and was found pulseless. Version and extraction, done with difficulty in about six minutes after feet were brought down	32½ hours	Normal	Male, 6 lbs. 8 oz.	Dead	O.F. 11.25 S.O.B. 8.5 Bip. 8 Bit. 7	
34	G. C. Black, 647 O.P.	I-para, 19	.....	21 23 28 17.5	L.O.I.A.	Spontaneous	.....	5½ hours	Normal	Female, 7 lbs. 6 oz.	Living	O.F. 11 S.O.B. 9.25 Bip. 8.25 Bit. 7	
35	E. S. Black, 6 H.	I-para, no mis. 18	History negative	23.5 25 27.5 18 11.5 10†	R.O.I.T.	Spontaneous, but slow	.....	13½ hours	Normal	Female, 6 lbs. 12 oz.	Living	O.F. 11 S.O.B. 9.5 Bip. 9 Bit. 8	
36	H. W. White, 18 H.	I-para, no mis. 28	Patient has marked edema and a large amount of albumen and casts in the urine, otherwise history negative	23.5 25.5 29.5 17.5 11.5 10	.....	6 months mis., entire ovum expelled at one pain	.....	.....	Febrile; rise of temp. to 102 on 2d day; on 9th day to 104.6; uterine cultures taken	6½ months fetus not weighed	Dead	Not measured	Uterine cultures sterile
37	J. P. White, 37 H.	III-para, no mis. 24	First child instruments and dead born; 2d labor hard	23.5 25.75 28 18 11.5	R.O.I.A.	.....	Patient admitted in hard labor, and there being no advance for 2 hours, was delivered by forceps (medium)	.....	Normal	Female, 2.785 gms.	Living	O.F. 11.5 S.O.B. 9.7 Bip. 9 Bit. 8	

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38	M. L. Black, 110 H.	IV;para, no mis. 35	Labors easy, no instruments. History negative	23 25.5 28 17 9 7†	R.O.I.T.	.....	On admisssion—cervix completely dilated—membranes ruptured; head impacted; cranial bones overlaping, high forceps	.....	Normal	Male, 3210 gms.	Living	O.M. 15 O.F. 11.75 S.O.B. 10½ Bip. 10¼ Bit. 8¼	
39	M. M. Syrian 115 H.	I-para, 1 mis. 17	Negative	23.5 25 29 17.5 11 0†	R.O.I.P.	.....	Patient admitted in labor; head above pelvic brim; cervix completely dilated;forceps; modified Scanzoni.	16 hours	Febrile 101.6. Uterine cultures taken	Male, 3000 gms.	Living. badly marked ab't head by f'rcps	O.M. 15 O.F. 12.25 S.O.B. 9.25 Bip. 8.75 Bit. 7,5	Uterine culture sterile, child in good condition on discharge
40	L. L. Black, 118 H.	I-para, no mis. 22	Negative	22.5 25.5 29.25 17 11 9	L.O.I.A.	.....	Patient had long first stage, 36 hours at her home; when admitted to Hosp. showed signs of exhaustion;pulse 112; temp. 100. Cervix dilated about 6 cm.;membranes ruptured. She had strong bearing down pains for 2 hours and cervix still remained undilated. The cervix was then dilated with the fingers and forceps applied without difficulty	44 hours	Normal	Female, 2785 gms.	Living	O.M. 12 O.F. 10.75 S.O.B. 8.25 Bip. 9.25 Bit. 8.25	
41	B. D. Black, 125 H.	I-para, no mis. 16	Negative	21 23 29 16 11 9	.....	Spontaneous, macerated fetus; patient admitted with child ½ born	....	.....	Febrile, temp. 103.6 on 3d day; culture taken and salt sol. intra-uterine douche given. Temp. normal afterwards	.....	Macerated fetus about 5 months	.....	Uterine culture sterile
42	J. G. Black, 152 H.	II-para, no mis. 23	Labors very easy	21.5 23.5 26.5 16.5 10.5 9	R.O.I.A.	Spontaneous	....	4½ hours	Normal	Male, 2810 gms.	Living	O.M. 11.5 O.F. 10 S.O.B. 9 Bip. 82.5 Bit. 7	
43	O. J. Black, 156 H.	I-para, no mis. 16	Negative	22 24.5 28 17.5 11† 9.5	R.O.I.A.	Spontaneous	....	23 hours, 43 minutes	Normal	Male, 3100 gms.	Living	O.M. 13 O.F. 11.5 S.O.B. 9.5 Bip. 9.5 Bit. 8.75	
44	A. W. Black, 187 H.	VI-para, 2 mis. 23	All labors easy	21 24 28 18 11.5 10	R.O.I.A.	Spontaneous	....	4 hours, 12 minutes	Normal	Female, 2840 gms.	Living	O.M. 13 O.F. 11 S.O.B. 9.75 Bip. 9 Bit. 7.75	
45	E. W Black, 185 H.	I-para, no mis. 17	Negative	23 24.5 28 18 11.5 10	R.O.I.A.	Spontaneous	....	16 hours	Normal	Female, 3400 gms.	Living	O.M. 13.75 O.F. 12 S.O.B. 9.25 Bip. 9 Bit. 8	

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46	G. E. Black, 197 H.	I-para, no mis. 16	Negative	25.4 24 26 16.5 10 8†	L.O.I.T.	.....	Patient admitted in 2d stage of labor; medium high forceps applied, child delivered; considerable difficulty in bring head past ischiac tuberosities	30 hours?	Normal	Female, 3350 gms.	Living	O.M. 14 O.F. 10.75 S.O.B. 9 Bip. 9 Bit. 8	
47	F. H. Black, 202 H.	I-para, no mis. 18	Negative	23.5 25.5 30.5 19 11 9.5	L.O.I.A.	Spontaneous	....	11 hours	Normal	Female, 2755 gms.	Living	O.M. 12.50 O.F. 11.25 S.O.B. 9.25 Bip. 9.25 Bit. 8	
48	B. B. White, 219 H.	I-para, no mis. 28	Albumen and casts in urine; threatened eclampsia; pregnancy 5½ to 6 months	23 25 28 17 11 9.5	L.O.I.T.?	.....	Accouchement force, version and extraction without difficulty	42 minutes	Normal	Female, 765 gms.	Living. Lived ½ hour	Not measured, 5½ months fetus	
49	M. D. White, 226 H.	I-para, no mis. 26	Negative	24 26 28 18 11.25 9.5	L.O.I.A.	Spontaneous	....	4 hours, 50 minutes	Normal	Male, 2820 gms.	Living	O.M. 12.5 O.F. 11 S.O.B. 10 Bip. 9.5 Bit. 8.5	Marked prominence symph. pubis; pubic arch narrow'd Trans.diam. of outlet narrow, 9 cm.
50	E. W. Black, 227 H.	II-para, no mis. 22	Previous labor long; no instruments used	24.5 25.5 29.5 18.5 11 9.5	L.O.I.A.	Spontaneous	....	11 hours, 45 minutes	Normal	Female, 3449 gms.	Living	O.M. 12 O.F. 11.75 S.O.B. 9.5 Bip. 9.5 Bit. 7.8	
51	T. L. White, 228 H.	I-para, no mis. 22	Slightly rhachitic head; history negative	21 24.75 27.5 16.5 10† 8.5	L.O.I.A.	Spontaneous	....	24 hours, 45 minutes	Febrile 101.1 on 4th day, otherwise normal	Female, 2510 gms.	Living	O.M. 12.25 O.F. 10.75 S.O.B. 9 Bip. 8.5 Bit. 7.5	Child's head did not engage until memb's ruptured
52	J. T. Black, 245 H.	I-para, no mis. 20	Negative	20.5 22 29.5 17† 10.25 8.25	R.O.I.A.	Spontaneous	....	20½ hours	Normal	Female, 2840 gms.	Living	O.M. 13.25 O.F. 10.5 S.O.B. 9.25 Bip. 9.25 Bit. 8	
53	M. D. Black, 262 H.	I-para, no mis. 17	Negative	20.5 23.5 27 17 11.25 9.25	L.O.I.A.	Spontaneous, 1st stage long	....	31 hours	Normal	Female, 2310 gms.	Living	O.M. 13.25 O.F. 10 S.O.B. 10.25 Bip. 9. Bit. 7	
54	F. F. White, 276 H.	I-para, no mis. 20	Negative	24 27 29.5 18.75 11.25 9.25	L.S.I.T. Legs extended	.....	Premature rupture of membranes. Prophylactic bringing down of leg; extraction and craniotomy on after-coming head; complete laceration of perineum; repaired	24 hours	Normal, but perineum did not unite well	Male, 4,150 gms.	Dead	O.M. 13 O.F. 11.25 S.O.B. 10 Bip. 10 Bit. 9	Crushed head; perineum repaired later on gynacological side

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55	L. V. Black, 286 H.	II-para, no mis. 22	Previous labor easy; no instruments	21.5 22 28 18 11.5 10	R.O.I.A.	Spontaneous	....	12 hours	Normal	Female, 2996 gms.	Living	O.M. 14.75 O.F. 10.75 S.O.B. 8.75 Bip. 9.25 Bit. 8.60	Head much elongated at time of birth
56	S. R. Black, 287 H.	I-para, no mis. 17	Negative	21.5 23.5 28 17 10 8.25	L.O.I.A.	.....	Patient admitted in labor; head above pelvic brim; membranes ruptured during examination; cervix dilated with Champetier de Rives' bag; child delivered by high forceps.	10 hours?	Febrile 103; Temp.102.4 before delivery; cultures taken at delivery, again on 3d dy. Intraut. douch salt.sol. given; temp. normal 7th dy. until discharge	Male, 3690 gms.	Living	O.M. 14 O.F. 11.25 S.O.B. 9 Bip. 9.25 Bit. 8.5	Uterine culture shows anacrobic bacillus growing only on glucose agar; could not be cultivated beyondorig.tube
57	S. W. Black, 290 H.	I-para, no mis. 14	Negative	22.5 24.25 28 17.5 11 9.5	L.acr I.A	.....	Patient first seen in out-patient departm't; cervix completely dilated; membranes ruptured; patient brought to Hosp.; child dead; uterus tetanically contracted ; decapitation and extraction	11 hours	Normal	Male,	Dead	O.M. 11.5 O.F. 9.75 S.O.B. 8.25 Bip. 7.25 Bit. 6	
58	D. C. Black, 295 H.	IV-para, no mis. 36?	Labors all normal; patient first seen in eclampsia	23.5 25.5 28 18.5 11.5	R.O.I.T.	.....	Accouchement force; manual dilation of cervix,version, extraction	10 minutes	Febrile 103; 17? convul'ns post partum; venesection, sweat baths and infusions salt. sol.; left hosp. 23d day well.	Female, 1970 gms.	Living, asphyx. at birth; fracture of left humerus during delivery	O.M. 11.5 O.F. 9.75 S.O.B. 8.5 Bip. 8 Bit. 7.5	Living at time of dischge, but gain no weight Fract. healed; no ut. culture taken on acc't of patient's condition
59	R. D. Black, 307 H.	I-para, no mis. 16	Slight curvature of both tibia; learned to walk in 2 years	23 23.5 27.5 18 11.25 9.25	L.O.I.A.	Spontaneous	....	21 hours	Normal	Male, 3150 gms.	Living	O.M. 13.25 O.F. 11.75 S.O.B. 9 Bit. 9 Bit. 7.5	
60	G. B. Black, 314 H.	I-para, no mis. 17	Negative	22 24 28 18.5 11 9	L.O.I.A.	Spontaneous	....	24 hours	Febrile 101.4; salt. sol. uter. douche given; temp. became normal	Male, 3480 gms.	Living	O.M. 12 O.F. 11.5 S.O.B. 9.5 Bip. 9 Bit. 8.5	Uterine cultures sterile
61	M. M. White, 320 H.	I-para, no mis. 22	Negative	22 24.5 28.5 17 11.25	L.O.I.A.	.....	Placenta previa lateralis; cervix dilated with Champitier de Ribes' bag;version and extraction	Patient entered hosp. in labor	Febrile 102.2; Strepto. pyogenes traced from another patient; temp. normal after douches of sol	Female, 1500 gms.	Living, died 3 hours after birth	O.M. 11.5 O.F. 10 S.O.B. 8.75 Bip. 7 Bit. 6	

SERIES NO.	NAME, RACE, NO.	PARA AND AGE.	PREVIOUS HISTORY AND LABORS.	PELVIC MEASUREMENTS.	POSITION	SPONTANEOUS LABOR.	INSTRUMENTAL LABOR.	DURATION OF LABOR.	PUERPERIUM.	SEX AND WEIGHT.	RESULT.	HEAD MEASUREMENTS.	REMARKS.
62	L. V. Black, 338 H.	I-para, no mis. 22	Learned to walk at 5 years	22.25 25 28.25 17.5	L.O.I.A.	Spontaneous	....	4 hours, 20 minutes	Normal	Male, 2600 gms.	Living, Marked caput succedeneum	O.M. 14 O.F. 11 S.O.B. 9.2 Bip. 8.9 Bit. 8.1	Patient would not allow vag. exam. at time of discharge; diam. conj. not measured
63	M. B. Black, 322 H.	I-para, no mis. 23	Slight bowing of tibia, otherwise negative; threatened eclampsia	24 25.5 29 18.25	R.O.I.A.	Spontaneous	....	2 hours, 35 minutes	Died of eclampsia post partum	Male, 2440 gms.	Living	O.M. 13.3 O.F. 11.4 S.O.B. 9.1 Bip. 9 Bit. 8.5	
64	Mrs. M. White, 35 O.P.	I-para, no mis.	Not taken; not registered at dispensary	21 22.25 29 16.5	R.O.I.P.	.....	After complete dilatation of cervix and several hours of strong second stage pains, examination showed uterus tetanically contracted head just engaged. Difficult high forceps operation, occiput posterior	15 hours, 20 minutes	On 10th day of puer. patient's temp. went pu to 103.4, pulse 140. As there were no symptoms of infection and a marked diarrh enteritis was diagnosed; the next day temp 101, pulse 116; 3 days later both normal	Male, 7 lbs. Female	Living	O.F. 11.5 S.O.B. 9.5 Bip. 9 Bit. 8	
65	M. H. Black, 48 O.P.	IV-para, 8 mis. 30	Walked at 4 years; teeth appeared later than usual; labors not instrumental; two breech and one occipital presentations.	23 25 30 17.5	Not made out	Spontaneous, when called feet present at vaginal outlet,	....	28¼ hours	Normal	Female	Dead, Child not macerated	Not measured	
66	L. L. White, 89 O.P.	I-para, no mis.	Negative	22.5 25.5 29	L.O.I.A.	Spontaneous	....	15 hours	Normal	Female, 6 lbs. 8 oz.	Living	O.F. 11 S.O.B. 9 Bip. 9 Bit. 8.5	
67	M. S. Black, 256 O.P.	IV-para, 1 mis. 24	Labors long, but no instruments used	21.5 23.5 28.5 18 Not taken	L.O.I.P.	Spontaneous	....	33 hours, 40 minutes	Normal	Female, 7 lbs.	Living	O.F 10.5 S.O.B. 8 Bip. 8.25 Bit. 7.5	
68	A. W. Black, 280 O.P.	I-para, 1 mis. 18	Negative	23.75 25 28.5 18 Not taken	R.O.I.P.	Spontaneous	....	26 hours	Normal	Female, 7 lbs. 12 oz.	Living	O.F. 11 S.O.B. 9.5 Bip. 9.25 Bit. 8 Circum. 34.5	
69	L. T. Black, 281 O.P.	I-para, no mis. 21	Negative	23.5 25.5 28.5 16.5 Not taken	L.O.I.A.	Spontaneous	....	6 hours	Normal	Male, 5 lbs. 12 oz.	Living	O.F. 11 S.O.B. 9 Bip. 7.25 Bit. 7.25 Circum. 30	
70	I. M. C. Black, 334 O.P.	I-para, no mis. 18	Negative	22 25 29 17	R.O.I.A.	Spontaneous, macerated fetus	....	15 hours	Normal	Male, 6 lbs.	Dead, macerated	Not taken	

SERIAL NO.	NAME RACE NO.	PARA AND AGE.	PREVIOTS HISTORY AND LABORS.	PELVIC MEASUREMENTS.	POSITION	SPONTANEOUS LABOR.	INSTUMENTAL LABOR.	DURATION OF LABOR.	PUERPERIUM.	SEX AND WEIGHT.	RESULT.	HEAD MEASUREMENTS.	REMARKS.
71	E G.½ Black, 373 O.P.	II-para, 3 mis. 37	Labors normal, no instruments	22.5 26 30 17.5	L.O.I.A.	Spontaneous, macerated fetus	....	4 days	Normal	Male, not weighed	Macerated fetus	Not taken	
72	I. B. Black, 422	II-para, no mis. 22	Labor difficult, delivered by instruments	22 24 28 18.25	L.O.I.A.	Spontaneous	....	2 hours, 25 minutes	Normal	Female, 7½ lbs.	Living	O.F. 11 S.O.B. 18.75 Bip. 9.25 Bit. 7.5 Circum. 31	
73	M. R. White, 406 O.P.	I-para, no mis. 24	Negative	23 26 29.5 17.5	R O.I.A.	Spontaneous	....	20 hours	Normal	Female, 6 lbs. 12 oz.	Living	O.F. 11.5 S.O.B. 9 Bip. 9.5 Bit. 7.5	
74	L. M. Black, 430 O.P.	II-para, no mis. 20	Labor long and difficult	20.5 23 27.5 17.5	L.O.I.A.	Spontaneous	....	2½ hours	Normal	Female, 6 lbs. 1 oz.	Living	O.F. 11.5 S.O.B. 9.25 Bip. 10 Bit. 8	
75	S. C. Black, 489 O.P.	I-para, no mis. 20	History negative	21.5 26 28 17.5	.....	Spontaneous, child died before doctor arrived	....	6½ hours	Febrile?	Male, 3 lbs. 12 oz.	Lived one day	O.F. 9.75 S.O.B. 8 Bip. 6.5 Bit. 7 Circum. 26	
76	B. H. Black, 467	I-para, no mis. 24	Negative	22.5 25 28.75 17.5	L.O.I.A.	Spontaneous	....	10 hours	Normal	Male, 7 lbs. 8 oz.	Living	O.F. 12 S.O.B. 9.25 Bip. 9.25 Bit. 8.25	
77	L. W. Black, 489 O.P.	V-para, 1 mis. 29	Labor normal, no instruments	21 23.5 28.75 17	L.O.I.A.	Spontaneous	....	23 hours	Normal	Female, 4 lbs.	Living	O.F. 10.75 S.O.B. 8.25 Bip. 8.25 Bit. 7.5 Circum. 27	
78	H. G. Black, 498 O.P.	IV-para, no mis. 22	No history of instrumental labors	23.5 23.5 28.5 16	Head presentations	Spontaneous; twins; 1st born before doctor arrived.	....	3¼ hours	Normal	Females, each one weighed 5½ lbs.	1st living 2d dead	O.F. 11.10—10.75 S.O.B. 9.5—10 Bip. 8.5—8.5 Bit. 7.5—7.5	
79	R. M. Black, 543 O.P.	I-para, no mis. 17	Tuberculosis. (J. H. H.dispensary); began to walk at 9 months	24 25 27.75 17.25	.....	Spontaneous; delivered before doctor arrived	....	.....	Febrile?	Male, 3 lbs.	Living, died 2d day	O.F. 9.5 S.O.B. 7.5 Bip. 6.5 Bit. 5.5 Circum. 24	

2. Rachitic Pelves, Twenty Cases.

SERIES NO.	NAME, RACE, NO.	PARA AND AGE.	PREVIOUS HISTORY AND LABORS.	PELVIC MEASUREMENTS.	POSITION	SPONTANEOUS LABOR.	INSTRUMENTAL LABOR.	DURATION OF LABOR.	PUERPERIUM.	SEX AND WEIGHT.	RESULT.	HEAD MEASUREMENTS.	REMARKS.
1	E. D., White, 10, O.P.	III-para, no mis. 27	Walked at 7 years; both labors long; forceps used each time	25.75 24.5 31 18.1 11	L.S.I.A.	....	Extraction very easy up to delivery of after coming head.	6¼ hours	Normal	Male, 8 lbs.	Living	O.F. 12 S.O.B. 11 Bip. 10 Bit. 8.5	
2	L. J., Black, 33, O.P.	III-para, 1 mis. 28	Walked at 2 years; labors both very slow non-instrumental	23 24 30 18 11	L.O.I.P.	.....	Difficult; high forceps.	15 h, 40 m	Normal	Female, 7 lbs. 8 oz.	Living	O.F. 11 S.O.B. 10 Bip. 9 Bit. 8 Circum. (?)	
3	S. D., Black, 59, O.P.	IX-para, no mis. 36	First labor forceps, two others with dead children, rest normal; marked signs rachitis.	23 24 29 17 11	R.O.I.P.	.....	High forceps to movable head, 2¾ hours after of complete dilatation of cervix.	10 hours	Normal	Female, 7 lbs.	Living	O.F. 11.5 S.O.B. 9 Bip. 8.5 Bit. 8	
4	S. G., Black, 136, O.P.	I-para, no mis. 21	Walked at one year, marked symptoms of rachitis.	22.5 23 27 17.5 11	R.O.I.P.	.....	Labor long; high forceps; difficult application and tear of perineum.	20 hours	Normal, perineum healed per prinam	Male, 8 lbs.	Living	Bit. 13.5 S.O.B. 11.5 Bip. 11 Bit. 10.5	
5	G. A., Black, 207, O.P.	II-para, no mis. 20	Comparatively easy labor; no instruments; gives definite signs of rachitis.	20.5 21.5 25.5 15.5 10.5	L.O.I.A.	.....	....	9 (?)	Normal	Female, 4¾ lbs.	Living	O.F. 10.5 S.O.B. 8.5 Bip. 8.5 Bit. 7.5 Circum. 28	
6	M. A., Black, 208, O.P.	X-para, 2 mis. 37	Distinct history of rachitis; labors hard, but without instruments.	24 25 32 17.5 10.25	R.O.I.P.	Spontaneous	Patient had 3 hours of strong second stage pains and head did not enter pelvis; an attempt made to apapply forceps failed; delivered by very difficult version, during which child died.	10 hours	Normal	Male, 7 lbs. 8 oz.	Dead	O.F. 12 S.O.B. 10.5 Bip. 9 Bit. 7.5	
7	E. K., Black, 216, O.P.	V-para 2 mis. 33	Labors difficult; non-instrumental	24 24.5 29 17.5 11	R.O.I.P.	.....	Low forceps head in R.O.I.T.	18 h, 40 m	Normal	Male, 8½ lbs.	Living	O. F. 11.5 S. O. B. 9.75 Bip. 8.5 Bit. 7.5	

SERIES NO.	NAME, RACE, NO.	PARA AND AGE.	PREVIOUS HISTORY AND LABORS.	PELVIC MEASUREMENTS.	POSITION	SPONTANEOUS LABOR.	INSTRUMENTAL LABOR.	DURATION OF LABOR.	PRERPERIUM.	SEX AND WEIGHT.	RESULT.	HEAD MEASURAMENTS.	REMARKS.
8	S. B., Black, 265, O.P.	I-para, no mis. 18	Typically rachitic; slight bowing of tibia, distinct outw'rd curving femur; head above pelvic brim.	25.5 24.5 28 13.5 9.25 7.25	L.O.I.T.	.....	Symphysiotomy and delivery by forceps.	(?)	Normal	Female, 6 lbs.	Living	O. F. 10.5 S. O. B. 9. Bip. 8.75 Bit. 8. Circum. 31.	
9	H. G., Black, 283, O.P.	IV-para, no mis. 22	All labors easy, signs of rachitis.	23.5 24 27.5 17 (?)	L.O.I.A.	Spontaneous	.....	1 h, 35 m	Normal	Female, 4¾ lbs.	Living	O.F. 9.75 S.O.B. 8 Bip. 8 Bit. 7 Circum. 27.5	
10	S. K., Black, 291, O.P.	VI-para, no mis. 20	First 4 labors easy, last instruments used	27.5 28 30 17 11.25	L.O.I.A.	Spontaneous	.....	17 hours	Normal	Female, 7 lbs.	Living	O.F. 11.75 S.O.B. 9.5 Bip. 9.75 Bit. 8.25 Circum. 34	
11	E. D., White, 355, O.P.	IV-para, no mis. 29	Walked at first 7 years, 2 labors, forceps; 3d labor difficult extraction of L.S.I.A.	25.75 24.5 31 18 11	R.S.I.A.	.....	Extraction.	18 hours	Normal	Female, 7 lbs. 4 oz	Living	O.F. 11.5 S.O.B. 8.75 Bip. 8.75 Bit. 8 Circum. S.O.B. 34	
12	E. K., Black, 649,	VI-para, 2 mis. 36	First 4 labors spontaneous, but difficult; 5th, low forceps	24 24.5 29 17.5 11	R.O.I.A.	Spontaneous	.....	31¼ hours	Normal	Female, 7½ lbs.	Living	O.F. 11 S.O.B. 8.75 Bip. 9 Bit. 7.5	
13	M. M., Black, 20, H.	I-para, no mis. 17	Learned to walk at 4 yrs, marked symptoms of rachitis	26 27 31 16.5 10.25 8.25	L.O.I.T.	.....	Patient in labor for some time and head would not enter pelvis. Delivered by very difficult high forceps.	48 hours	Normal	Male, 3300 grams	Dead	O. M. 11 O.F. 11 S.O.B. 10 Bip. 8.25 Bit. 7.1	
14	R. B., Black, 78, H.	II-para, no mis. 19	First child delivered by craniotomy on living child	25.5 25 29.5 15.5 9.75 7.75	R.O.I.T.	.....	Patient delivered by high forceps, considerable difficulty in delivering the shoulders.	47 hours	Normal	Female, 3540 gms.	Living, cord abt neck; asphyxi'td, resus. by hot and cold wat.	O.M. 12.75 O.F. 11.75 S.O.B. 9.6 Bip. 8.75 Bit. 8.15	Patient did not enter hosp. until after she had labored some time
15	G. C., Black, 84, H.	I-para, no mis. 20	Tibla showed distinct rachitic curve, says she had some fractures as a child	22 24.5 29 18 10 8	L.O.I.A.	Spontaneous, child deliver'd before doctor could reach ward	.....	(?)	Normal	Female, 2730 gms.	Living, badly asphyxi'td, resuci-	O.M. 11.75 O.F. 11 S.O.B. 9.5 Bip. 8.5 Bit. 8	
16	S. N., Black, 107, H.	I-para, no mis. 24	Negative	25.25 26 28 17† 10 8	L.O.I.A.	.....	Patient suddenly seized with convulsions and child delivered by version, with craniotomy on after coming head; perineum slightly torn and repaired.	.....	Febrile 102.6, due to infection with bacillicoli com temp. normal after douching uterus with salt sol. perineum healed	Male, 2077 grams	Dead, heart not heard at beginning of operat'n	O.M. 12.3 O.F. 12 S.O.B. 10 Bip. 9.5 Bit. 7.5 Measurements on crushed head	

SERIES NO.	NAME, RACE, NO.	PARA AND AGE.	PREVIOUS HISTORY AND LABOR.	PELVIC MEASNREMENTS.	POSITION	SPONTANEOUS LABOR.	INSTRUMENTAL LABOR.	DURATION OF LABOR.	PUERPERIUM.	SEX AND WEIGHT.	RESULT.	HEAD MEASUREMENTS.	REMARKS.
17	A. H., Black, 139 H.	II-para, no mis. 23	Learned to walk at 6 years, first labor normal.	24.4 24.2 28 17.2 11.5 9.5	Brow, face to right	.....	Premature rupture of membranes. Patient in hospital 2 days with ruptured membranes and slight pains. Champetier de Rives' balloon introduced, and after some severe pains expelled. Cervix dilated rnd cord prolapsed. Version was quickly done, but the child was dead. Mother's pulse very weak and rapid during operation; 100 cc. blood lost.	28½ hours	Temp. 101.6 on 2d and 3d day. Remainder of puerp. normal and patient went home well on 15th day	Female, 2500 gms.	Dead, Stillborn	O. M. 12 O.F. 12 S.O.B. 9 Bip. 9 Bit. 8	Post-partum exam. conj. obliq. 10.3. No culture taken on account of weak condition of patient
18	L. T., Black, 183 H.	II-para, no mis. 23	First labor very difficult, instruments used.	23.75 24.5 30.5 17.5 11 9	R.O.I.T.	.....	Cervix completely dilated in 4½ hours, membranes were then ruptured and second stage pains continued for 6 hours and head did not engage. High forceps	11 hours	Normal	Male, 3200 gms.	Living	O.M. 14 O.F. 12 S.O.B. 10 Bip. 9.5 Bit. 8	
19	M. S., White, 316 H.	I-para, no mis. 25	Marked lateral curvation of the femora and the tibia curved antero-posteriorly, with the convexity backward. On looking at the patient's back it is noted that the sacrum is particularly prominent and presents a well marked ridge extending across its upper portion.	Spines 23.5 Crests 23.5 Troch. 28 D.B. 16.5 ? Cong. diam 9.5 Estimated C.V. 7.5 Ant. post. diam. of outlet 8 Transvers diam. of outlet 7.25	L.O.I.T.	.....	Patient admitted after having been in labor 22 hours, and repeated attempts had been made by an outside physician to deliver her by forceps. Uterus tetanically contracted, cord prolapsed and not pulsating. Child delivered by perforation and cranioclasis	23 hours	Febrile 103.2; incontinence of urine from 7th to 20th day; patient discharged on 36th day in good condition	Female, 1895 gms.; weighed without brain	Dead before admission to ward	O.M. 13.80 O.F. 12.10 S.O.B. 9.75 Bip. 9.75 Bit. 8.50	Uterine culture taken at time of delivery showed strepto and staphylococci; culture taken two days later shows bacillus aerogenes capsulatus & bac. coli com.
20	E. F., Black, 333 H	II-para, no mis. 20	Previous labors short and easy, no instruments used. Well marked bowing of tibia.	26.5 26.5 32.5 18 10.75 9	L.O.I.A.	Spontaneous	.....	22 h, 40 m	Normal	Female, 3282 gms.	Living	O.M. 13.5 O. F. 11 S.O.B. 9.25 Bip. 8.75 Bit. 7.5	

3. Simple Flat Pelves, Twenty-five Cases.

SERIAL NO.	NAME, RACE, NO.	PARA AND AGE.	PREVIOUS HISTORY AND LABOR.	PELVIC MEASUREMENTS	POSITION	SPONTANEOUS LABOR.	INSTRUMENTAL LABOR.	DURATION OF LABOR.	PUERPRRIUM.	SEX AND WEIGHT.	RESULT,	HEAD MEASUREMENTS.	REMARKS.
1	J.J. Black, 32 O.P.	VIIIpara no mis. 35	Spontaneous	24 26 30½ 18 11	L.O.I.P.	Spontaneous	....	9 hours, 55 minutes	Normal	Male, 7 lbs. 8 oz.	Living	O.F. 12.5 S.O.B. 9.5 Bip. 9.5 Bit. 8.5	
2	K. H., Irish, 36 O.P.	III-para, no mis. 38	Both labors difficult; craniotomy on both occasions.	28 29 31 17 10.5	L.O.I.A.	Miscarried at 6½ months; later normal, except for slight tear of perineum	....	.....	Normal	Male, 5 lbs. 8 oz.	Living, died 2d day	.....	Reported by Dr. Williams & Dr. Dobbin.
3	G. B., Black, 42 O.P.	VII para, 2 mis. 39	Walked at 4 years; labors normal.	24 27 32 18 11	L.O.I.A.	Spontaneous, head above pelvic brim until beginning of second stage	....	6⅔ hours	Normal	Male, 8 lbs.	Living	O.F. 12 S.O.B. 9½ Bip. 10 Bit. 9 Circum. 34	Reported by Dr. Williams & Dr. Dobbin.
4	M. B., White, 67 O.P.	VI-para, 1 mis. 30	Labors normal	24.5 27 31 17 11	R.O.I.T.	Spontaneous, but slow; posterior arm behind neck of child when delivered	.....	8¼ hours	Normal	Female lbs. 8 oz.	Living	O.F. 10.5 S.O.B. 10.75 Bip. 9 Bit. 8.5 Circum. 32	Reported by Dr. Dobbin.
5	M. K., White, 116 O.P.	IV-para, no mis. 26	First labor instrumental, dead child; other two labors long and tedious.	26 28 32 21 11½	L.O.I.A.	.....	Cervix fully dilated for six hours; high forceps; version, difficulty with after coming head; child died; craniotomy.	.....	Normal	Male 10 lbs.	Dead	O.F. 11.5 S.O.B. 15.5 Bip. 9.5 Bit. 9	
6	B. A., White, 186 O.P.	III-para, no mis. 25	Spontaneous	25.5 27 30.5 19 10.5	L.O.I.A.	Spontaneous	....	8 hours	Normal	Male, 8 lbs.	Living	O.F. 12 S.O.B. 10.5 Bip. 9	
7	Mrs. S., White, 213 O.P.	III-para, no mis. 25	Both labors instrumental; forceps. First child killed during delivery.	25 27.5 32 18 11.5	L.O.I.A.	.....	After a very long 2d stage patient was delivered by a difficult high forceps operation.	9½ hours	Normal	Male, 9 lbs.	Living	O.F. 13 S.O.B. 11.5 Bip. 9.5 Bit. 8.5 Circum. 38	Reported by Dr. Dobbin.
8	S. B., Black, 250 O.P.	VIIIpara 2 mis. 39	Walked at 4 years, labors normal.	24 27 32 18 11	.....	Spontaneous delivered before doctor arrived	....	7 hours	Normal	Female, ?	Living	.....	Reported by Dr. Williams & Dr. Dobbin. and in No. 2 of this series.
9	L. K., White, 544 O.P.	IV-para, no mis. 32	First two labors long, forceos in first; third labor spontaneous and short.	24.5 28.5 30.75 17.5 10.75	R.O.I.A.	Spontaneous, childdelivered before physician arrived	....	6⅙ hours	Normal, except for one rise of 101.2 on 4th day	Male, 6 lbs.	Living	O.F. 10.75 S.O.B. 9 Bip. 8.75 Bit. 7.5	

SERIES NO.	NAME RACE NO.	PARA AND AGE.	PREVIOUS HISTORY AND LABORS.	PELVIC MEASUREMENTS.	POSITION	SPONTANEOUS LABOR.	INSTRUMENTAL LABOR.	DURATION OF LABGR.	PUERPERIUM.	SEX AND WEIGHT.	RESULT.	HEAD MEASUREMENTS.	REMARKS.
10	L. T., Black, 621 O.P.	VIIIpara no mis. 36	2d and 7th labors forceps, others spontaneous, but long	24.5 26.5 32 19 11	R.O.I.T.	.....	Version and extraction; head above hip strait after complete dilatation of cervix. Prolapsed cord.	11 hours	Normal	Female, 7 lbs.	Living	O.F. 10.5 S.O.B. 8.5 Bip. 9.75 Bit. 7.5	
11	C. D., Black, 644 O.P.	II-para, no mis. 26	Previous labors easy	25 26.5 30 19 11	L.O.I.A.	Spontaneous	.....	7½ hours	Normal	Male, 8 lbs.	Living	O.F. 11.25 S.O.B. 9.75 Bip. 9.75 Bit. 8.5	
12	A. F., Black, 28 H.	I-para, no mis. 24	Negative	23 25 30 18	L.O.I.A.	.....	Second stage pains lasted two hours and were very ineffectual, child delivered by low forceps.	11¾ hours	Febrile 102.6	Female, 3435 gms.	Living	O.M. 14 O.F. 11.5 S.O.B. 9.5 Bip. 9.25 Bit. 8.50	Uterine culture showed same organism as found in vagina before labor.
13	G. N., White, 83 H.	IV-para, 1 mis. 30	First and third child delivered by instruments, both dead-born; second labor fairly easy	26.5 27.5 30 18.5 11 9†	L.S.I.A.	.....	Difficult extraction; leff clavicle of child fractured, perineum lacerated, rupture of pubic ligaments?	14 hours	Febrile 102.1, due to injury of pubic joint? perineum well healed	Male, 3730 gms.	Living	O.M. 13.75 O.F. 11.6 S.O.B. 11.5 Bip. 10 Bit. 8.75	Uterine culture sterile
14	V. G., Black, 112 H.	I-para, no mis. 30	Negative	24.5 26 30 17.5 11 10	R.O.I.P.	Spontaneous	.....	14 50-60 hrs	Normal	Male, 3035 gms.	Living	O.M. 12 O.F. 11.25 S.O.B. 9.25 Bip. 9. Bit. 8.10	
15	L. F., Black, 138 H.	I-para, no mis. 18	Negative	24 25 28 17 10.5† 9	L.O.I.A.	Spontaneous	.....	9 hours, 35 35 minutes	Practically normal, one rise to 101	Male, 3236 gms.	Living, head much elongatd at birth	O.M. 13.7 O.F. 11.9 S.O.B. 9 Bip. 9.5 Bit. 8.5	Uterine culture sterile
16	L. J., White, 170 H.	VI-para, no mif. 34	All labors easy, no instruments	25.5 27 31.5 18.5 10.5 9	R.O.I.T.	.....	Patient admitted in convulsions; accouchement force, version.	21 minutes	Practically normal, one rise during convulsions to 101.8, only one convulsion during puerperium	Female, 2400 gms.	Living	O.M. 12.25 O.F. 11.5 S.O.B. 9.75 Bip. 9.25 Bit. 8.25	
17	P. S., Black, 208 H.	I-para, no mis. 19	Negative	24.5 26 30.5 19 10.5 9	L.O.I.A.	Spontaneous	.....	20 hours	Normal	Female, 3420 gms.	Living	O.M. 14 O.F. 11.75 S.O.B. 8.5 Bip. 82.5 Bit. 8	
18	K. H., Irish, 243 H.	IV-para, no mis. 36	First two labors difficult, craniotomy on both; 3d premature birth 6½ months? After 3d pregnancy she was paralyzed	27.75 29 23 19† 10.5 8.5	L.A.I.A.	.....	Membranes ruptured before dilatation of cervix, followed by no pains; Champetier de Rives' balloon introduced; version and extraction. The after coming head delivered by a difficult M. S. V. manœuvre.	.....	Normal, except for slight rise of temp.	Male, 3050 gms.	Living	O.M. 13 O.F. 12 S.O.B. 10.25 Bip. 9.6 Bit 8.25	No uterine culture taken, on account of the difficulty in putting her in a position to take it.

SERIES NO.	NAME RACE NO.	PARA AND AGE.	PREVIOUS HISTORY AND LABORS.	PELVIC MEASUREMENTS.	POSITION	SPONTANEOUS LABOR.	INSTRUMENTAL LABOR.	DURATION OF LABOR.	PUERPERIUM.	SEX AND WEIGHT.	RESULT.	HEAD MEASUREMENTS.	REMARKS.
19	L. S., White, 258 H.	I-para, no mis. 21	Negative	27 28.5 29 17.5 10.5 8.5	L.O.I,A.	Spontaneous	....	25 hours, 26 minutes	Normal	Male, 3130 gms.	Living	O.M. 14.50 O.F. 11.50 S.O.B. 9.75 Bip. 9.25 Bit. 8	
20	J. L., White, 300 H.	II-para, 1 mis. 31	First child delivered by forceps, complete tear of perineum	24 27 29 18 11 9.5	R.O.I.A.	Spontaneous, membranes ruptured at onset of labor.	Owing to the great amount of scar tissue around the outlet, double episiotomy.	7 hours, 40	Normal	Male, 3730 gms.	Living	O.M. 12.25 O.F. 11.75 S.O.B. 10.25 Bip. 9.25 Bit. 7.75	
21	J. D., White, 312 H.	I-para, no mis. 20	Negative	24.25 27.75 28.5 16.5 11.25 9.25	L.O.I.A.	.....	....	11 hours, 25 minutes	Normal	Male, 3710 gms.	Living	O.M. 13.5 O.F. 11.75 S.O.B. 9.5 Bip. 9.4 Bit. 8.3	
22	E. W., White, 329 H.	I-para, no mis. 16	Negative	24.5 26 31.5 18 10.5 8.75	L.O.I.A.	Spontaneous, very long first stage	....	69 hours, 40 minutes	Febrile 104, temp. not accounted for; culture from uterus sterile	Male, 3710 gms.	Living. caput succd'm well marked	O.M. 11.5 O.F. 11.5 S.O.B. 9.5 Bip. 9. Bit. 8	Head of child remained above pelvic brim untilwell on in labor
23	A. Z., White, German Jew. 349 H.	I-para, no mis. 23	History negative.	25.5 28 29.5 18.5 11 9	L.O.I.P.	.....	Membranes ruptured accidently while making vaginal examination and cord prolapsed; as it could not be replaced, version and extraction.	12 hours, 30 minutes	Normal	Male, 3230 gms.	Living	O.M. 12.5 O.F. 12 S.O.B. 11.25 Bip. 9 Bit. 8	Head of child remained above superior strait until it was extracted
24	M. C., White, 113 O.P.	I-para, no mis. 16	.....	24 26 30.5 18	L.O.I.T.	.....	High forceps.	6 hours, 52 minutes	Normal	Female, 7 lbs. 12 oz.	Living	O.F. 11 S.O.B. 9 Bip. 9 Bit. 8	
25	E. L., White, 545 O.P.	V-para' 1 mis. 29	First labor forceps, others normal	24.5 26.5 27.5 17.5	L.O.I.A.	Spontaneous	....	22½ hours	Normal	Female, 6¼ lbs.	Living	O.F. 11 S.O.B. 9.5 Bip. 9 Bit. 8	

4. Irregular Forms of Contracted Pelves, Seven Cases.

SERIAL NO.	NAME, RACE, NO.	PARA AND AGE.	PREVIOUS HISTORY AND LABOR.	PELVIC MEASUREMENTS.	POSITIOT	SPONTANEOUS LABOR.	INSTRUMENTAL LABOR.	DURATION OF LABOR.	PUREPERIUM.	SEX AND WEIGHT.	RESULT.	HEAD MEASUREMENTS.	REMARKS.
1	L. L., White, 144, O.P.	XVIpara no mis. 38	First seven labors normal. Ten years ago, when two months pregnant, she was "paralyzed" for 3 years and became 3 inches shorter in stature. In the last ten years she has had 8 children, 5 of which were dead born; forceps used in all elght cases. She now has pains in pelvic bones, and walks with a peculiar gait.	23 28 31 19 11	Brow presenting, face to left	.....	Patient seen after she had been in labor some hours in charge of a midwife. Uterus tetanic and presents the shape characteristic of pelvic obstruction. Vaginal examination shows distortion of the pubic bones and pubic arch in the typical "stirrup form." The entire pelvis is generally contracted. Promontory very prominent and overhangs markedly the rest of the sacrum. The oblique conjugate measures 11 cm., which, however, does not indicate the true pelvic capacity, on account of the deformity of pubic bones arch; child dead, large fontanelle presenting in the left anterior portion of the pelvis; delivery by very difficult Basiotripsy and extraction with blunt hook.	10½ hours	Normal	Female, 8 lbs. 4 oz.	Dead	Head crushed	Osteomalacia in a native born white woman.
2	M. B., White, 69, O.P.	VII para, no mis. 38	Left coxalgia, with complete ankylosis of hip. First 3 labors normal, last 3 very difficult.	21.5 24 30 18 symph. 7 high	L.O.I.T.	.....	Difficult high forceps operation, which was complicated by the ankylosis of left hip.	11¼ hours	Normal	Female, 5 lbs. 4 oz.	Dead	O.F. 11.15 S.O.B. 9 Bip. 8 Bit. 8	Obliquely contracted coxalgic pelvis.
3	Mrs. S., White, 269, O.P.	IV-para, no mis. 31	All three children delivered by forceps; all children large. Gives history of puerperal infection after each labor. Old coxalgia of right hip causing oblique distortion of pelvis.	24.75 26.75 30.5 20	R.O.I.T.	.....	Prolapse funis; version, extraction. The antero-post. diameter of pelvis is not affected, but the right pelvic wall is markedly flattened & pushed toward the median line. Transverse contraction of outlet	4½ hours	Normal	Male, 10 lbs.	Living	O.F. 12.75 S.O.B. 10.5 Bip. 10.5 Bip. 9 Circum. 3.63	Obliquely contracted coxalgic pelvis.
4	Mrs H., White, 640, O.P.	VII para, 2 mis. ?	All labors difficult, but spontaneous; marked deformity due to old healed coxalgia of right leg.	26 27.5 32 20 11 9	L.O.I T.	.....	Version and very difficult extraction.	30 hours	Attented during puerperium by Fran Kannas	Male, 9 lbs.	Living	O.F. 11.5 S.O.B. 9.75 Bip. 9.5 Bit. 8.5	Obliquely contracted coxalgic pelvis.

SERIES NO.	NAME RACE NO.	PARA AND AGE.	PREVIOUS HISTORY AND LABORS.	PELVIC MEASUREMENTS.	POSITION	SPONTANEOUS LABOR.	INSTRUMENTAL LABOR.	DURATION OF LABOR.	PUERPERIUM.	SEX AND WEIGHT.	RESULT.	HEAD MEASUREMENTS.	REMARKS.
5	H. M., Black, 337 H.	VI-para, 2 mis. 36	Labors all easy, no instruments used, congenital dislocation nof right hip.	23.5 24.5 27 17.5 10.5 9	L.O.I.A.	Spontaneous	....	12 hours, 24 minutes	Normal	Female, 2270 gms.	Living	O.M. 12 O.F. 10.5 S.O.B. 8.5 Bip. 8.5 Bit. 7	Obliquely contracted pelvis, congenital dislocation of right hip.
6	M. N., White, 232 H.	I-para, no mis. 26	Congenital dislocation of hips.	25.5 26 32.5 18.25 11.5 9 cm	L.O.I.A.	Spontaneous	....	12 hours, 50 minutes	Normal	Male, 4000 gms.	Living	O.M. 13 O.F. 12 S.O.B. 10.5 Bip. 9.25 Bit. 8	Double congental dislocation of hips.
7	J. T., Black, 261 H.	II-para, no mis. 22	Healthy and well until 9 years ago, she had a fall on the ice and injured her right hip. First child 4½ years ago spontaneous. On vaginal examination the entire body of the last lumbar vertebra has been dislocated downward and forward, and covers the entire surface of the first sacral vetebra.	24 27 29 18 9.5 7.5 Transv'rse contract'n of outlet.	Oblique head in one iliac fossa	.....	Syphysiotomy.	4½? hours	Died on 9th day	Male, 3085 gms.	Living	O.M. 13.4 O.F. 11.6 S.O.B. 9.6 Bip. 9.1 Bit. 7.7	Spondylolisthesis.