

DIAGRAM 1.

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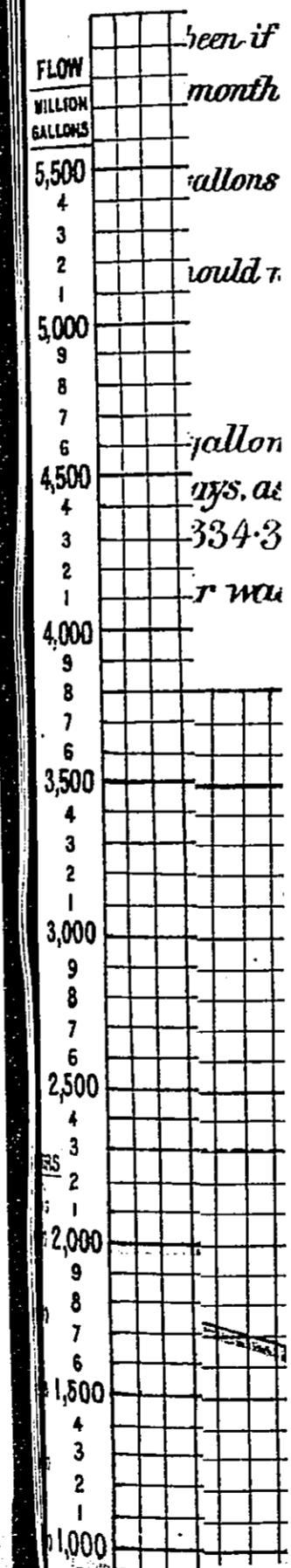


DIAGRAM I.

(Sir Alexander Binnie's Diagram A¹)

Diagram shewing the working of the Staines Reservoir Scheme in such a year as 1885, supplying 300 million gallons a day, with a minimum flow of 200 million gallons over Teddington Weir.

(Handed in by Sir Alexander Binnie on the 22nd Day. See Question 9228.)

IT IS ASSUMED.

- (1) That the flow of the River as shewn in Red was the Natural Flow over Teddington Weir as it would have been if no water had been taken out by the Water Companies in the year 1885.
- (2) That the draught on the River will average 300 million gallons a day, but will be drawn in the different months of the year in the mean proportions which were abstracted from the Thames by the Companies in the years 1896-1897.
- (3) That the constructional capacity of the 14 Reservoirs will be 28,000 million gallons, less 3,000 million gallons to allow for cleansing bottom impurity, and evaporation, or a net working capacity of 20,000 million gallons.
- (4) That the Reservoirs were full at the commencement of the year and that the flow over Teddington Weir should never be reduced below 200 million gallons a day.

RESULTS.

That the Reservoirs with some fluctuation remain full up to the 17th June.

That on the 10th Sep^r the water in the Reservoirs was reduced to 7,130.8 million gallons and again on the 8th Oct. to 6716.2 million gallons.

That the flow over Teddington Weir was reduced to 200 million gallons a day for 129 days, as compared with an average natural flow during the same period of 425.3 million gallons a day, and an actual average flow of 334.3 million gallons a day, during the year 1885.

There were 10 days in the year 1885 when the actual flow over Teddington Weir was less than 200 million gallons a day.

REFERENCE.

- The Red line shews the Natural flow of the River.
- The Blue line shews the effect produced on the flow of the River by the abstraction of water to fill the Reservoirs and supply London.
- / The Blue hatched portions shew when the River is flowing under the flood limit.
- The Green line shews the quantity of water in the Reservoirs.

Flow at Teddington Weir, Vertical
Contents of Reservoirs, — do —
Horizontal = Day

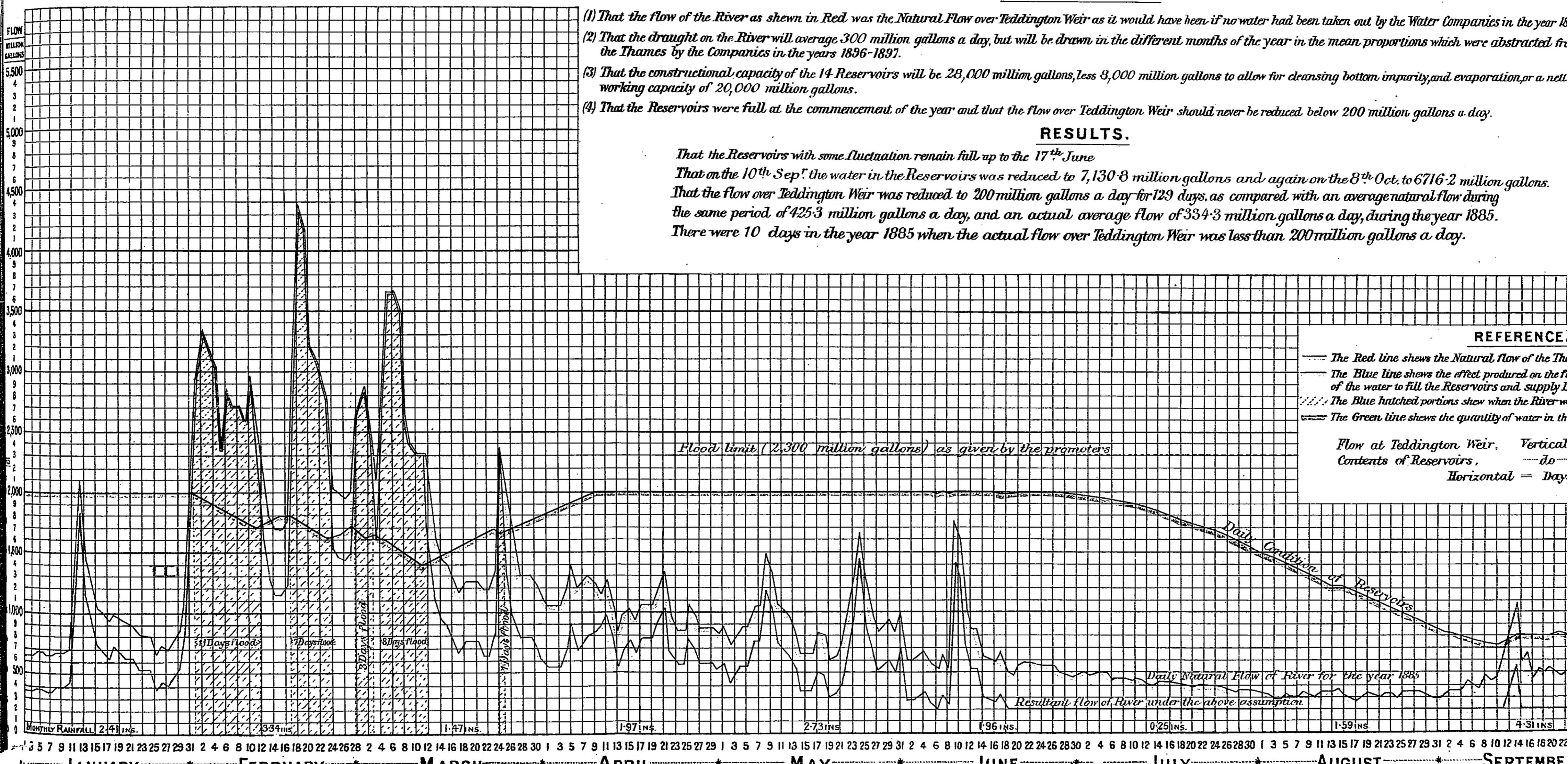


DIAGRAM I.

er Binne's Diagram A¹.)

g of the Staines Reservoir Scheme in such a year
allows a day, with a minimum flow of 200 mil-

Weir.

er Binnie on the 22nd Day. See Question 9228.)

IT IS ASSUMED.

Teddington Weir as it would have been if no water had been taken out by the Water Companies in the year 1885
will be drawn in the different months of the year in the mean proportions which were abstracted from

on gallons, less 8,000 million gallons to allow for cleansing bottom impurity, and evaporation, or a nett

e flow over Teddington Weir should never be reduced below 200 million gallons a day.

RESULTS.

the 17th June

duced to 7,130.8 million gallons and again on the 8th Oct. to 6,716.2 million gallons.

tion gallons a day for 129 days, as compared with an average natural flow during

a actual average flow of 334.3 million gallons a day, during the year 1885.

al flow over Teddington Weir was less than 200 million gallons a day.

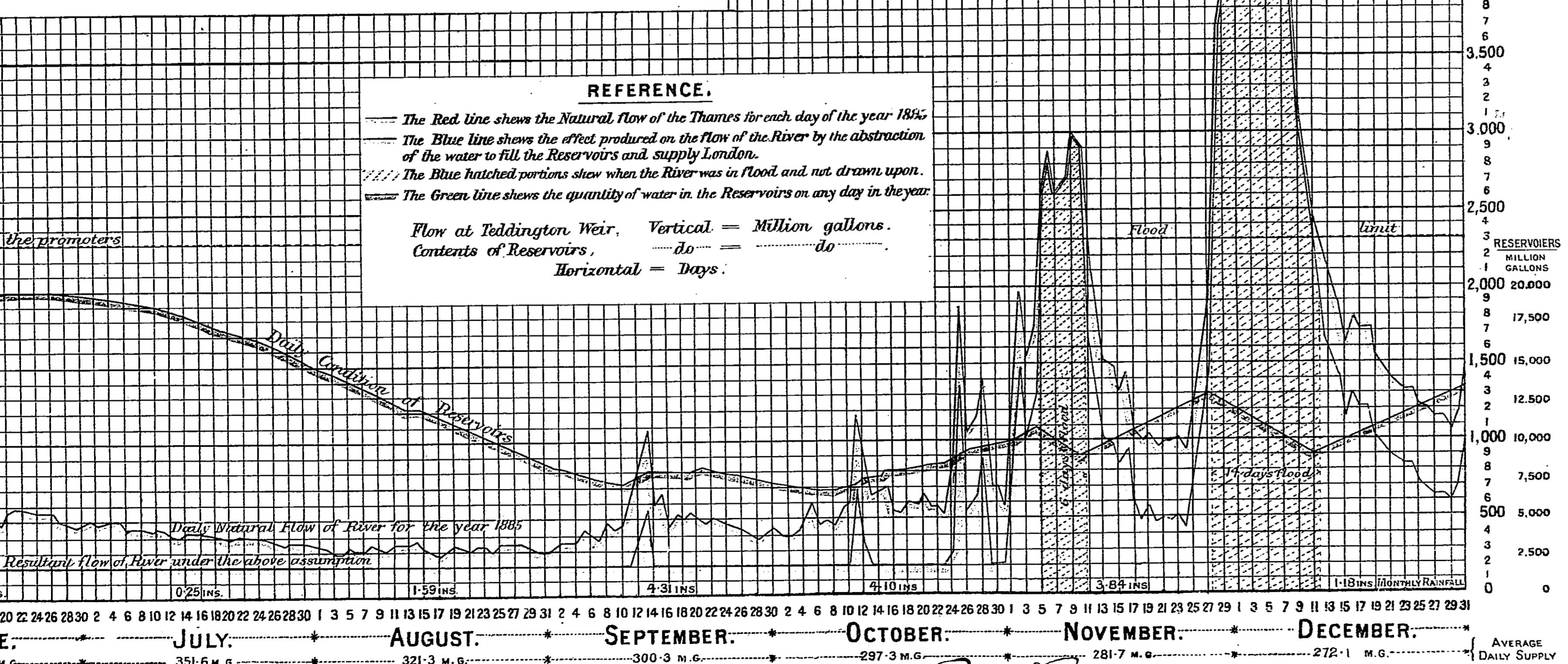
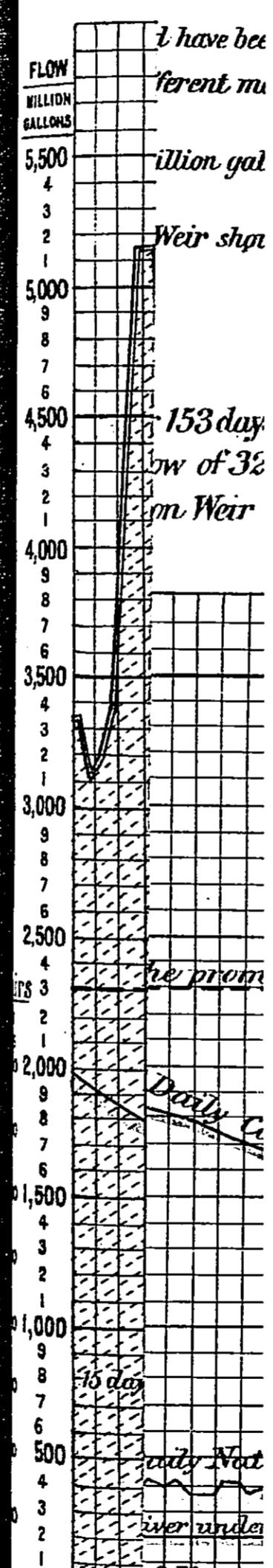


DIAGRAM 2.

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STAGE SUPPLY

DIAGRAM 2.

(Sir Alexander Binnie's Diagram A²)

Diagram shewing the working of the Staines Reservoir Scheme in such a year as 1887. supplying 300 million gallons a day, with a minimum flow of 200 million gallons over Teddington Weir.

(Handed in by Sir Alexander Binnie on the 22nd Day. See Question 9228.)

IT IS ASSUMED.

- (1) That the flow of the River as shewn in Red was the Natural Flow over Teddington Weir as it would have been if no water had been taken out by the Water Companies in the year 1887.
- (2) That the draught on the River will average 300 million gallons a day, but will be drawn in the different months of the year in the mean proportions which were abstracted from the Thames by the Companies in the years 1896-1897.
- (3) That the constructional capacity of the 14 Reservoirs will be 28,000 million gallons, less 8,000 million gallons to allow for cleansing bottom impurity, and evaporation, or a net working capacity of 20,000 million gallons.
- (4) That the Reservoirs were full at the commencement of the year and that the flow over Teddington Weir should never be reduced below 200 million gallons a day.

RESULTS.

That the Reservoirs with some fluctuation remain full up to the 21st June.

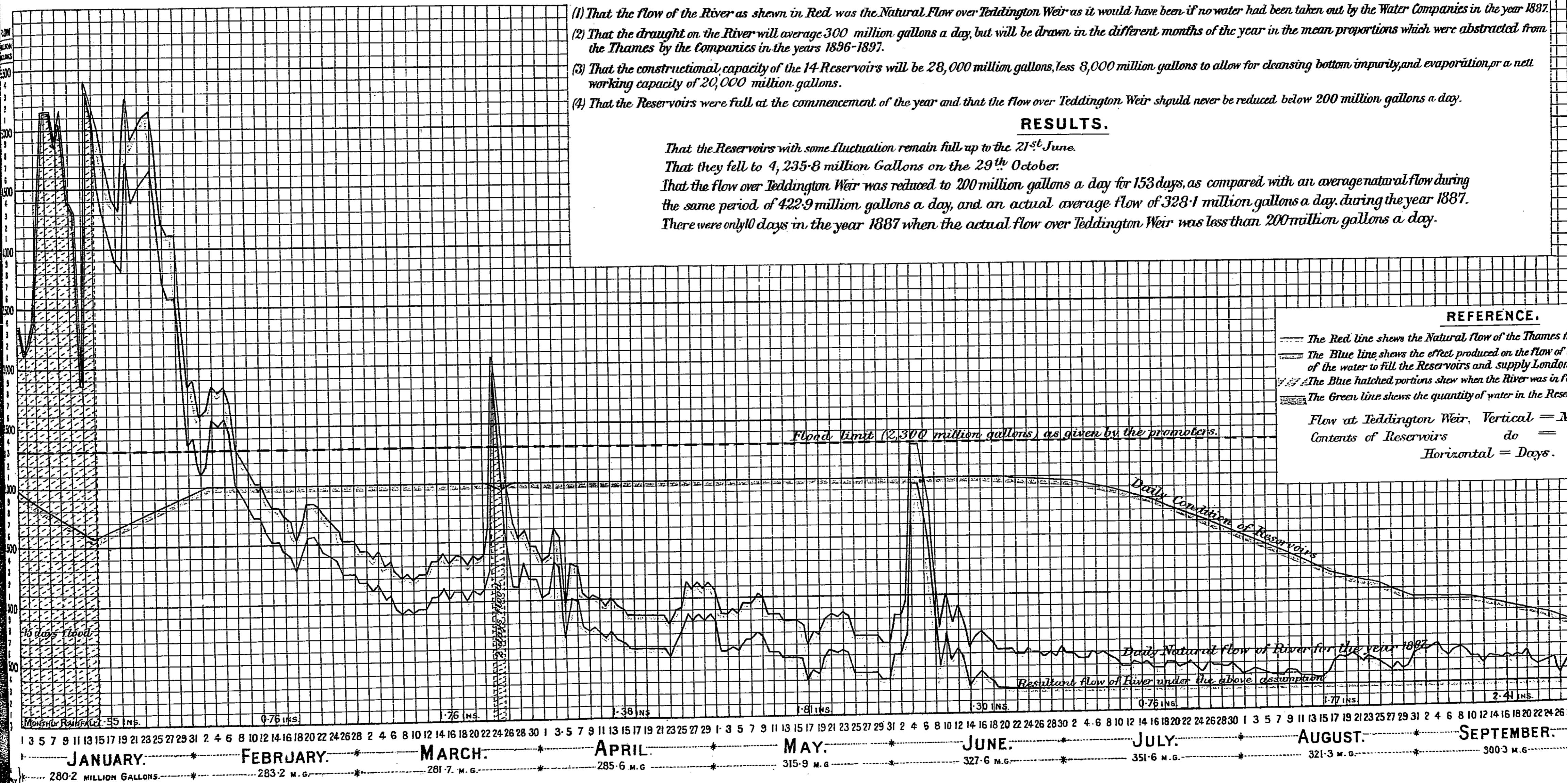
That they fell to 4,235.8 million Gallons on the 29th October.

That the flow over Teddington Weir was reduced to 200 million gallons a day for 153 days, as compared with an average natural flow during the same period of 422.9 million gallons a day, and an actual average flow of 328.1 million gallons a day during the year 1887. There were only 10 days in the year 1887 when the actual flow over Teddington Weir was less than 200 million gallons a day.

REFERENCE.

The Red line shows the Natural flow of the Thames
The Blue line shows the effect produced on the flow of
of the water to fill the Reservoirs and supply London
The Blue hatched portions show when the River was in
The Green line shows the quantity of water in the Reservoirs

Flow at Teddington Weir, Vertical = A
Contents of Reservoirs do =
Horizontal = Days.



GRAM 2.

Binnie's Diagram A²)

The Staines Reservoir Scheme in such a year
a day, with a minimum flow of 200 mil-

rie on the 22nd Day. See Question 9228.)

ASSUMED.

Weir as it would have been if no water had been taken out by the Water Companies in the year 1887.
drawn in the different months of the year in the mean proportions which were abstracted from

ns, less 8,000 million gallons to allow for cleansing bottom impurity, and evaporation, or a nett

er Teddington Weir should never be reduced below 200 million gallons a day.

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llons a day for 153 days, as compared with an average natural flow during
al average flow of 328.1 million gallons a day, during the year 1887.
over Teddington Weir was less than 200 million gallons a day.

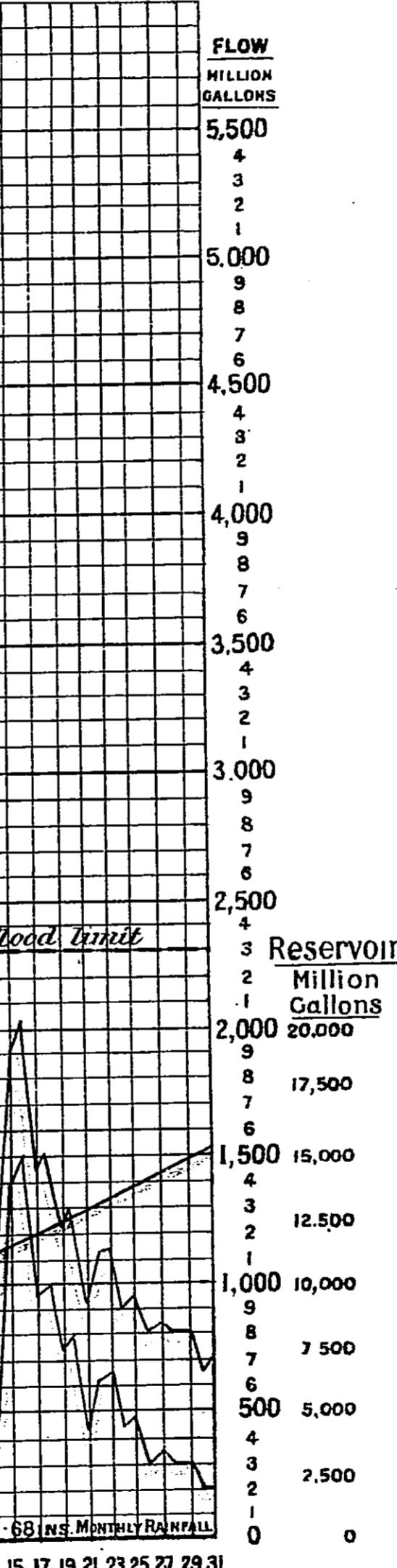
as given by the promoters.

Daily Consumption of Reservoirs
Daily Natural flow of River for the year 1887
stant flow of River under the above assumption

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- The Red line shows the Natural flow of the Thames for each day of the year 1887.
- The Blue line shows the effect produced on the flow of the River by the abstraction of the water to fill the Reservoirs and supply London.
- The Blue hatched portions shew when the River was in flood and not drawn upon.
- The Green line shews the quantity of water in the Reservoirs on any day in the year.

Flow at Teddington Weir, Vertical = Million gallons.
Contents of Reservoirs do do
Horizontal = Days.



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JULY: * AUGUST: * SEPTEMBER: * OCTOBER: * NOVEMBER: * DECEMBER: *

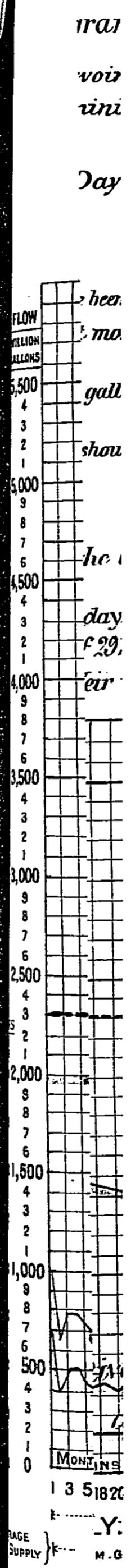
351.6 M.G. * 321.3 M.G. * 300.3 M.G. * 297.3 M.G. * 281.7 M.G. * 272.1 M.G. *

AVERAGE
DAILY SUPPLY

Wyman & Sons Ltd. Lith. 365. B. 92

John R. Binnie

DIAGRAM 3.



- (1) That the flow of the River as shewn in Red
- (2) That the draught on the River will average 1,000 million gallons per day
- (3) That the constructional capacity of the 14 Reservoirs will be 20,000 million gallons per day
- (4) That the Reservoirs were full at the commencement of January

That the Reservoirs with some exception
practically they were empty
of 820 million gallons during
the same period of 405.2 million gallons
There were only 28 days in the month

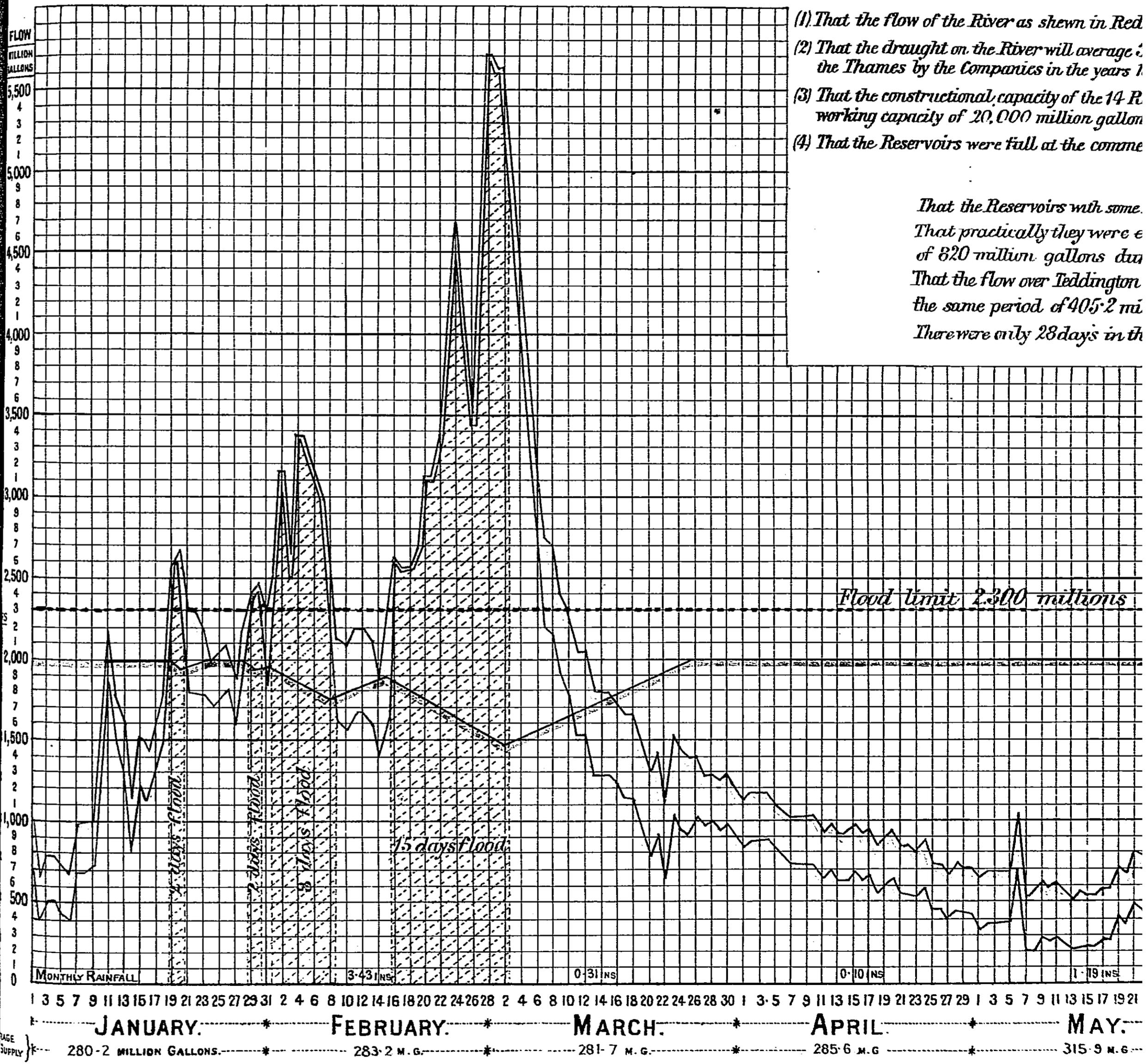


DIAGRAM 3.

(Sir Alexander Binnie's Diagram A³)

Diagram shewing the working of the Staines Reservoir Scheme in such a year as 1893 supplying 300 million gallons a day, with a minimum flow of 200 million gallons over Teddington Weir.

(Handed in by Sir Alexander Binnie on the 22nd Day. See Question 9228.)

IT IS ASSUMED

- at the flow of the River as shewn in Red was the Natural Flow over Teddington Weir as it would have been if no water had been taken out by the Water Companies in the year 1893;
- at the draught on the River will average 300 million gallons a day, but will be drawn in the different months of the year in the mean proportions which were abstracted from the Thames by the Companies in the years 1896-1897;
- at the constructional capacity of the 14 Reservoirs will be 28,000 million gallons, less 3,000 million gallons to allow for cleansing bottom impurity and evaporation, or a net working capacity of 20,000 million gallons;
- at the Reservoirs were full at the commencement of the year and that the flow over Teddington Weir should never be reduced below 200 million gallons a day.

RESULTS.

*That the Reservoirs with some fluctuation remain full up to the end of May
That practically they were exhausted on the 8th and 9th October and that the bottom impurity was drawn upon to the extent of 820 million gallons during the 8 days from the 8th to the 15th November.
That the flow over Teddington Weir was reduced to 200 million gallons a day for 188 days, as compared with an average natural flow during the same period of 405.2 million gallons a day, and an actual average flow of 297.9 million gallons a day, during the year 1893.
There were only 28 days in the year 1893 when the actual flow over Teddington Weir was less than 200 million gallons a day.*

REFERENCE.

- The Red line shows the Natural flow of the Thames for each day of the year 1893.
- The Blue line shows the effect produced on the flow of the River by the abstraction of the water to fill the Reservoirs and supply London.
- The Blue hatched portions shew when the River was in flood and not drawn upon.
- The Green line shows the quantity of water in the Reservoirs on any day in the year.

*Flow at Teddington Weir, Vertical = Million gallons.
Contents of Reservoirs, — do = — do
Horizontal = Days.*

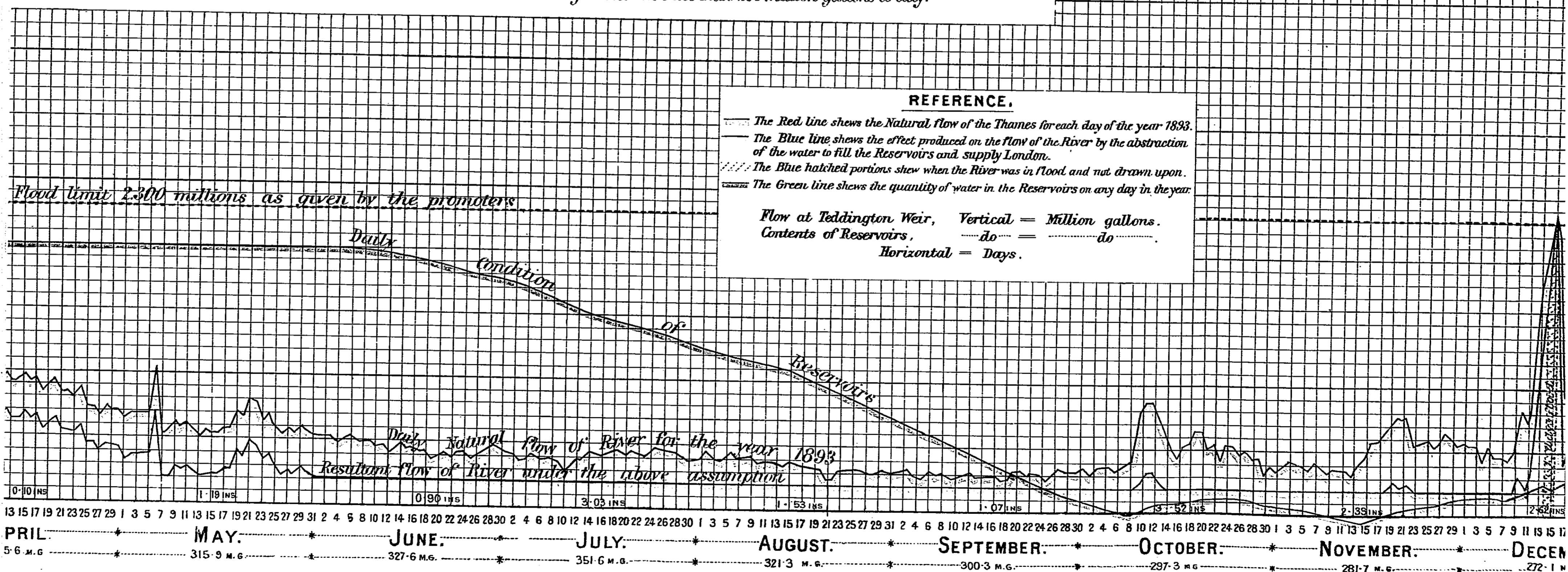


DIAGRAM 4.

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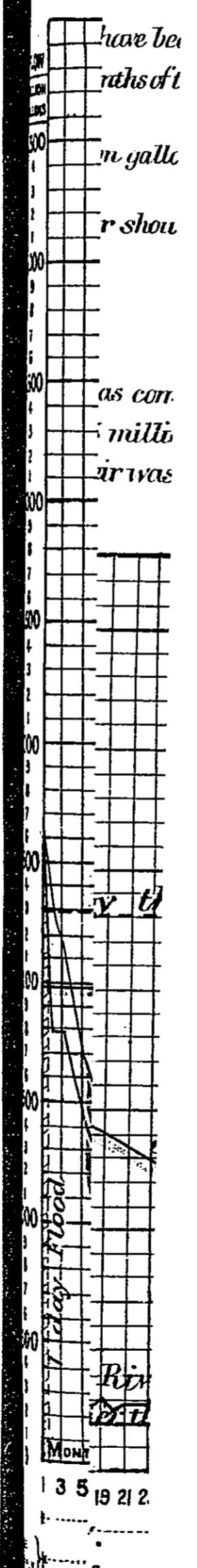
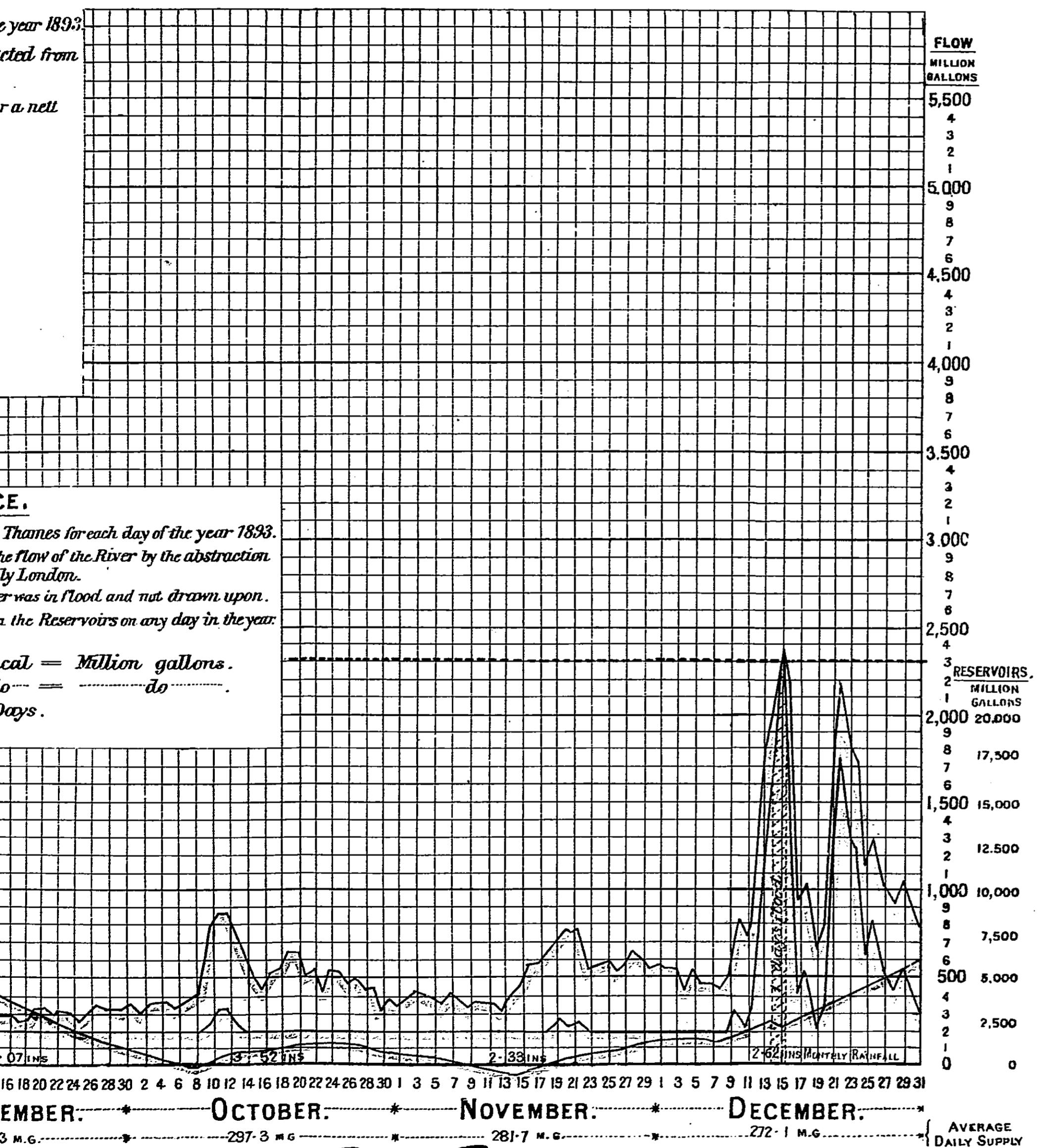
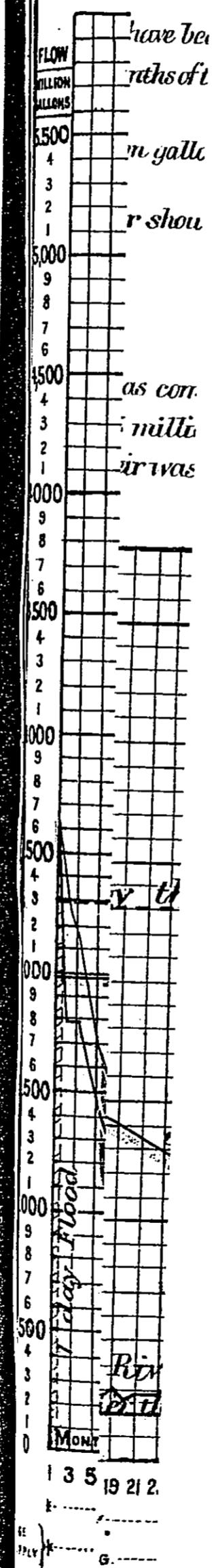


DIAGRAM 4.

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- (1) That the flow of the River as shewn in Red,
 - (2) That the draught on the River will average 3*c* Thames by the Companies in the years 189
 - (3) That the constructional capacity of the 14 Reservoirs will be 20,000 million gallons.
 - (4) That the Reservoirs were full at the commence-

That the Reservoirs will some 1
that they sell to 4,886.8 million
That the flow over Teddington 1
the same period of 421.9 milli
there were only 33 days in the

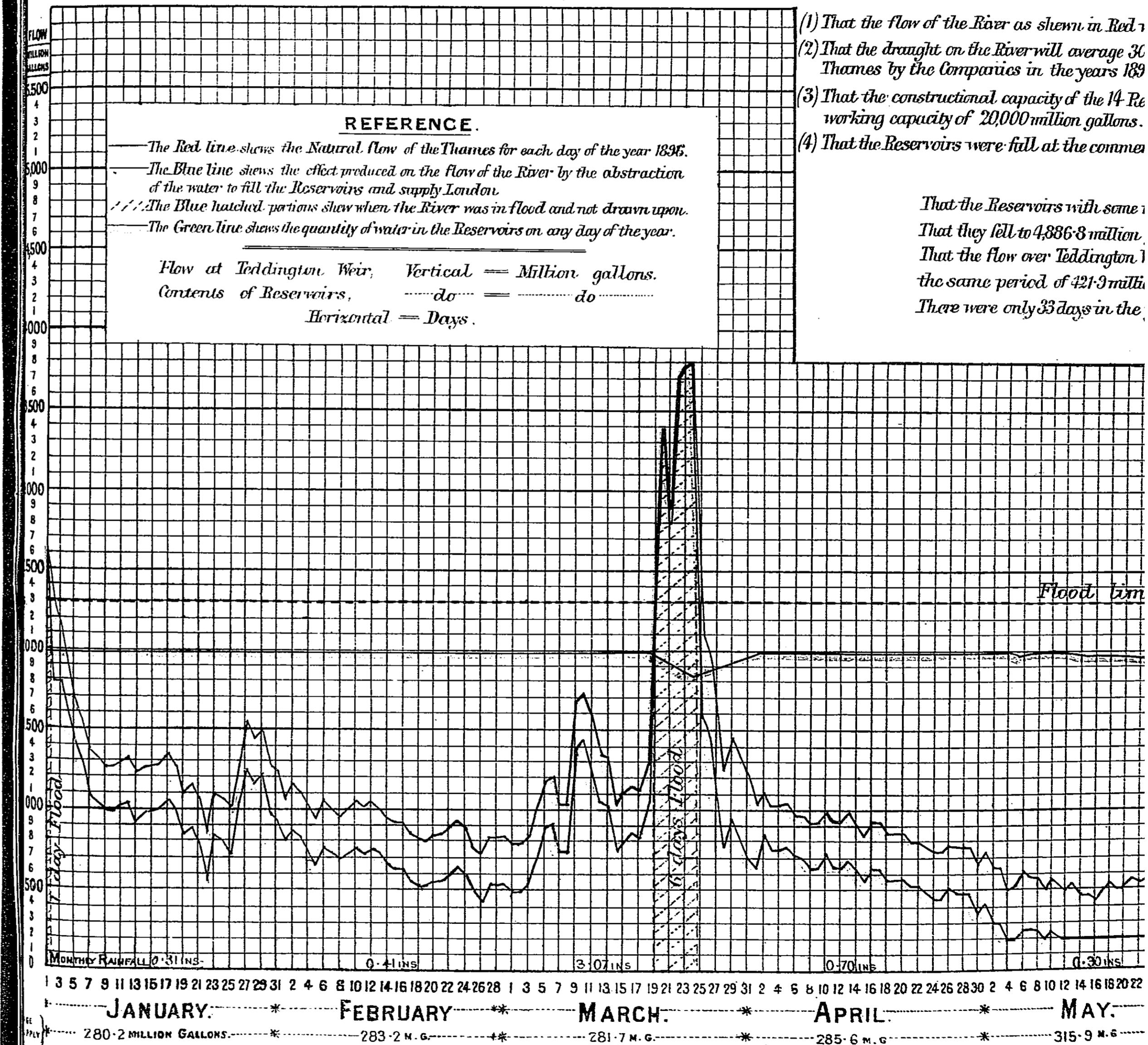


DIAGRAM 4.

(Sir Alexander Binnie's Diagram A⁴.)

Diagram shewing the working of the Staines Reservoir Scheme in such a year as 1896 supplying 300 million gallons a day, with a minimum flow of 200 million gallons over Teddington Weir.

(Handed in by Sir Alexander Binnie on the 22nd Day. See Question 9228.)

IT IS ASSUMED.

that the flow of the River as shown in Red was the Natural Flow over Teddington Weir as it would have been if no water had been taken out by the Water Companies in the year 1896.
that the draught on the River will average 300 million gallons a day, but will be drawn in the different months of the year in the mean proportions which were abstracted from the times by the Companies in the years 1896-1897.

that the constructional capacity of the 14 Reservoirs will be 28,000 million gallons, less 8,000 million gallons to allow for cleansing bottom impurity and evaporation, or a net working capacity of 20,000 million gallons.

that the Reservoirs were full at the commencement of the year and that the flow over Teddington Weir should never be reduced below 200 million gallons a day.

RESULTS.

That the Reservoirs with some fluctuations remain full up to the 27th May.

That they fall to 4,886.8 million gallons on the 1st September.

That the flow over Teddington Weir was reduced to 200 million gallons a day for 127 days as compared with an average natural flow during the same period of 421.9 million gallons a day, and an actual average flow of 296.5 million gallons a day, during the year 1896.

There were only 33 days in the year 1896 when the actual flow over Teddington Weir was less than 200 million gallons a day.

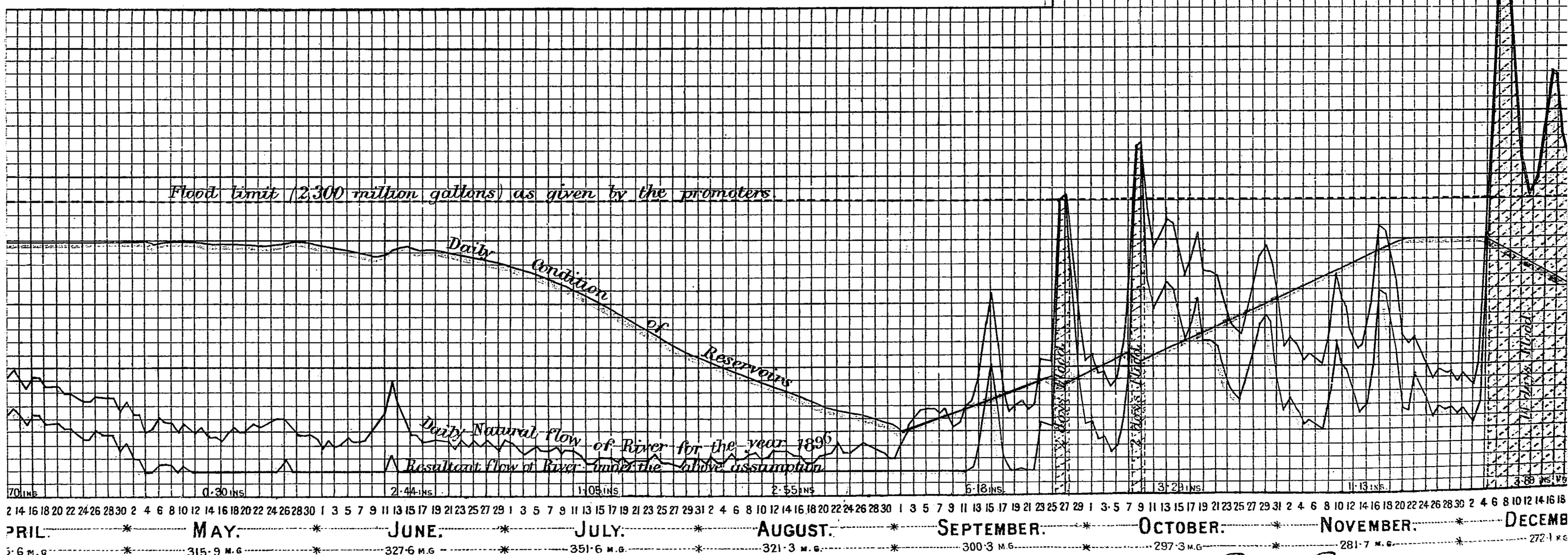


DIAGRAM 5.

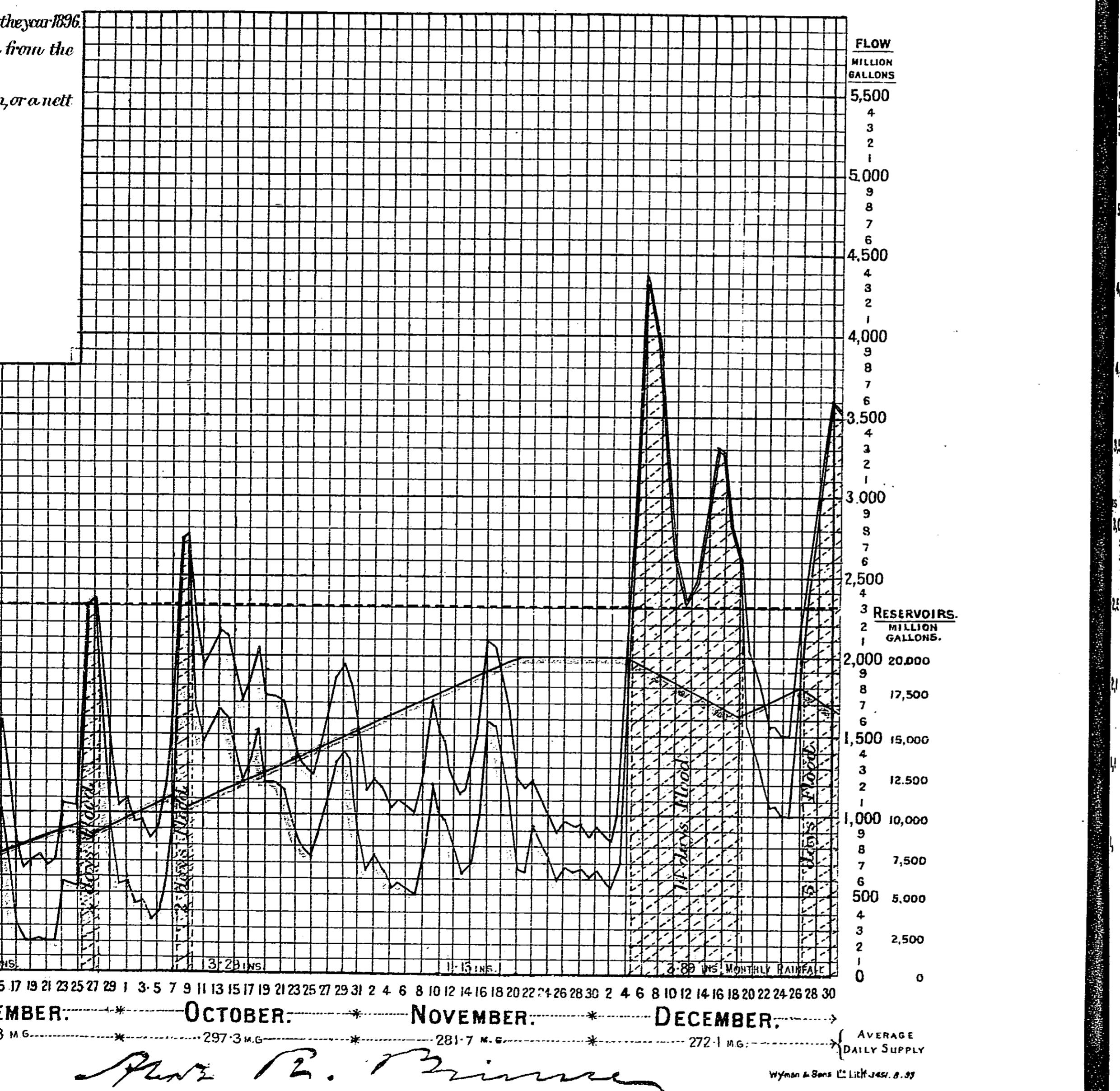


DIAGRAM 5.

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- (1) That the flow of the River as shewn in Rec.
- (2) That the draught on the River will average the Thames by the Companies in the years i
- (3) That the constructional capacity of the 19 H working capacity of 28,613 million gallou
- (4) That the Reservoirs were full at the commu

That the Reservoirs with some
That they fell to 9,779.2 m
That the flow over Teddington
the same period of 428.0 m
There were 35 days in the

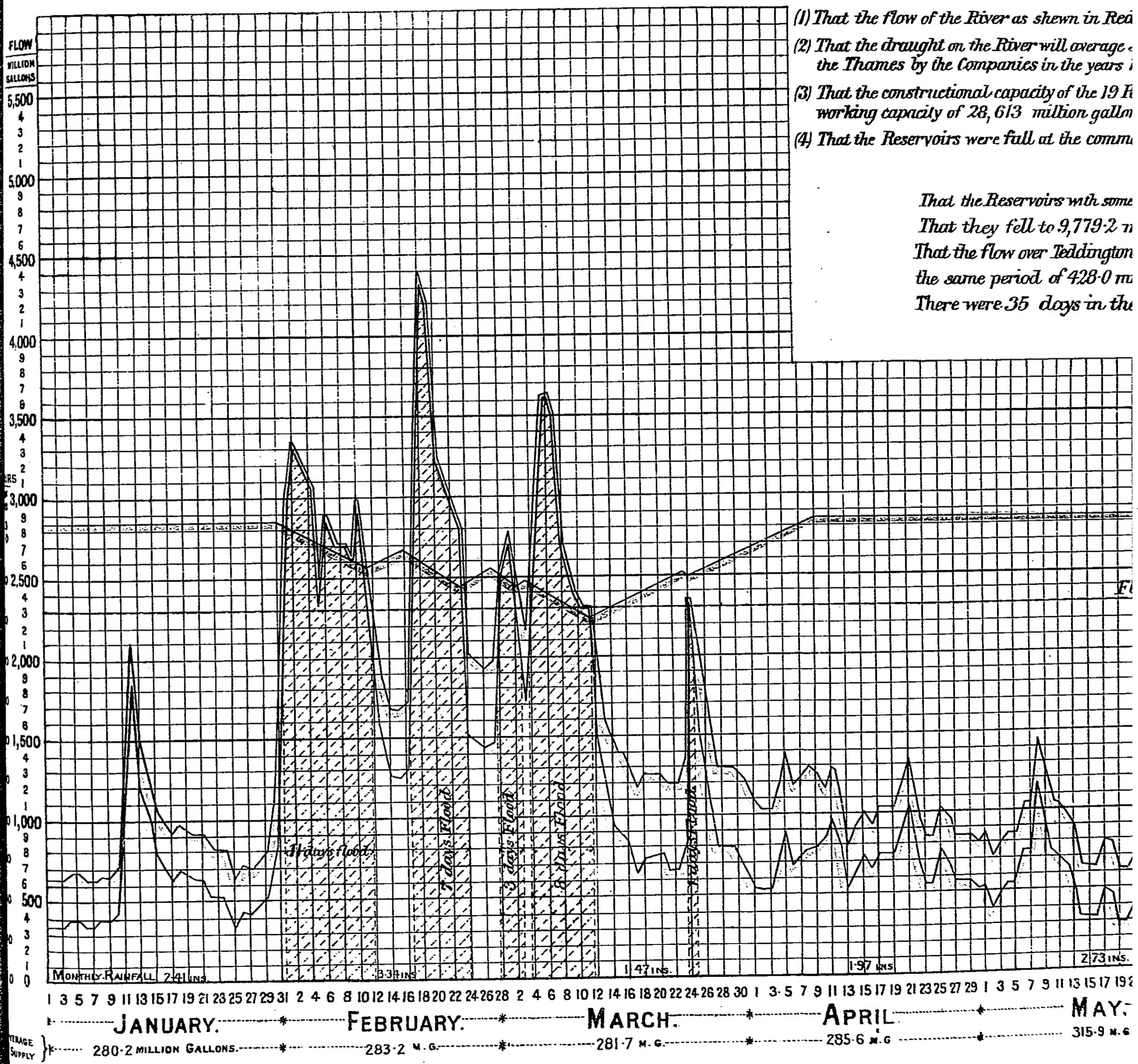


DIAGRAM 5.

(Sir Alexander Binnie's Diagram B.)

Diagram shewing the working of the Staines Reservoir Scheme in such a year as 1885, supplying 300 million gallons a day, with a minimum flow of 250 million gallons over Teddington Weir.

(Handed in by Sir Alexander Binnie on the 22nd Day. See Question 9228.)

IT IS ASSUMED.

- (1) That the flow of the River as shewn in Red was the Natural Flow over Teddington Weir as it would have been if no water had been taken out by the Water Companies in the year 1885.
- (2) That the draught on the River will average 300 million gallons a day, but will be drawn in the different months of the year in the mean proportions which were abstracted from the Thames by the companies in the years 1896-1897.
- (3) That the constructional capacity of the 19 Reservoirs will be 38,000 million gallons, less 9,387 million gallons to allow for cleansing bottom impurity, and evaporation, or a nett working capacity of 28,613 million gallons.
- (4) That the Reservoirs were full at the commencement of the year and that the flow over Teddington Weir should never be reduced below 250 million gallons a day.

RESULTS.

That the Reservoirs with some fluctuation remain full up to the 17th June.

That they fell to 9,779.2 million gallons on the 8th October.

That the flow over Teddington Weir was reduced to 250 million gallons a day for 131 days, as compared with an average natural flow during the same period of 428.0 million gallons a day, and an actual average flow of 337.1 million gallons a day, during the year 1885.

There were 35 days in the year 1885 when the actual flow over Teddington Weir was less than 250 million gallons a day.

REFERENCE.

- The Red line shews the Natural flow of the Thames for each day of the year 1885.
- The Blue line shews the effect produced on the flow of the River by the abstraction of the water to fill the Reservoirs and supply London.
- The Blue hatched portions shew when the River was in flood and not drawn upon.
- The Green line shews the quantity of water in the Reservoirs on any day in the year.

Flow at Teddington Weir Vertical = Million gallons.
Contents of Reservoirs do = do
Horizontal = Days.

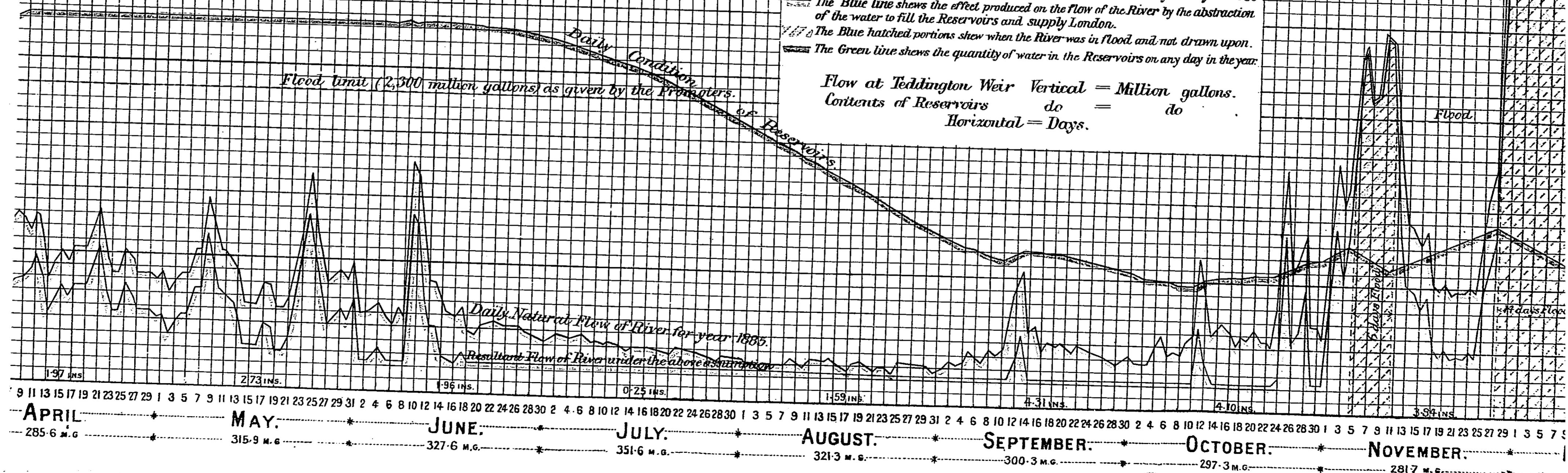


DIAGRAM 6.

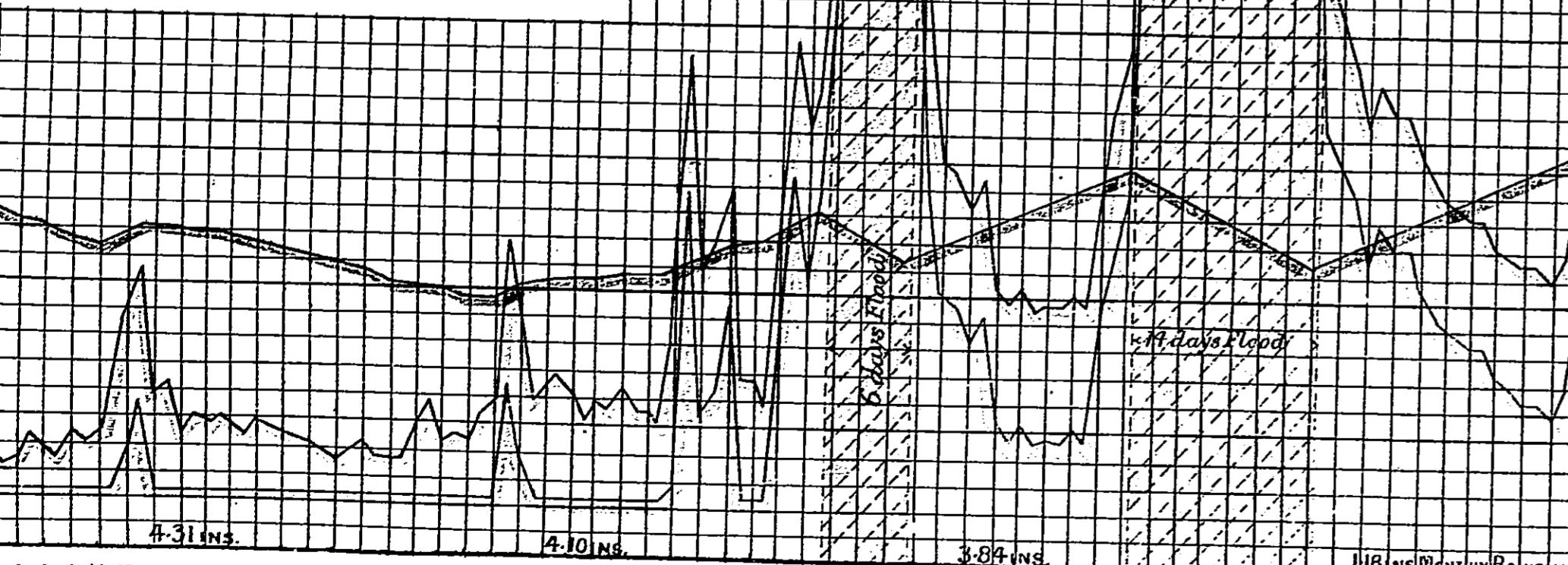
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flow during
year 1885.
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REFERENCE.

natural flow of the Thames for each day of the year 1885
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show when the River was in flood and not drawn upon.
quantity of water in the Reservoirs on any day in the year.

on Weir Vertical = Million gallons.
voirs do = do
Horizontal = Days.



4 6 8 10 12 14 16 18 20 22 24 26 28 30 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31

SEPTEMBER. OCTOBER. NOVEMBER. DECEMBER.

300.3 M.G.

297.3 M.G.

281.7 M.G.

272.1 M.G.

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DAILY SUPPLY

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- (1) That the flow of the River as shown in Red
- (2) That the draught on the River will average :
the Thames by the Companies in the years 1
- (3) That the constructional capacity of the 19 R
- (4) That the Reservoirs were full at the commu

That the Reservoirs with some
That they were reduced to
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the same period of 430.5 m
There were only 29 days in t

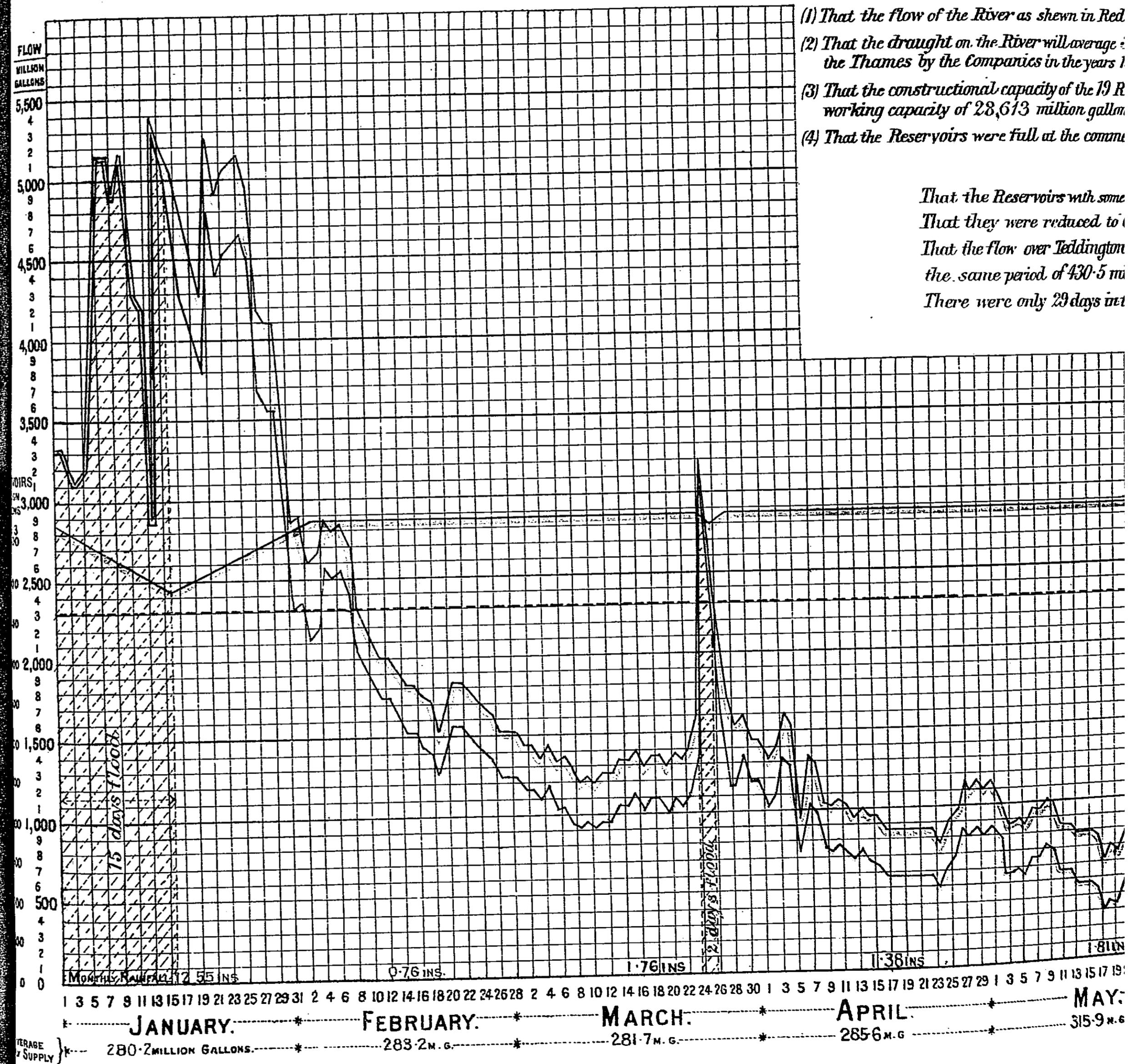


DIAGRAM 6.

(Sir Alexander Binnie's Diagram B?)

Diagram shewing the working of the Staines Reservoir Scheme in such a year as 1887, supplying 300 million gallons a day, with a minimum flow of 250 million gallons over Teddington Weir.

(Handed in by Sir Alexander Binnie on the 22nd Day. See Question 9228.)

IT IS ASSUMED.

*That the flow of the River as shown in Red was the Natural Flow over Teddington Weir as it would have been if no water had been taken out by the Water Companies in the year 1887.
That the draught on the River will average 300 million gallons a day, but will be drawn in the different months of the year in the mean proportions which were abstracted from the Thames by the Companies in the years 1896-1897.*

That the constructional capacity of the 19 Reservoirs will be 38,000 million gallons, less 9,387 million gallons to allow for cleansing bottom impurity, and evaporation or a nett working capacity of 28,613 million gallons.

That the Reservoirs were full at the commencement of the year and that the flow over Teddington Weir should never be reduced below 250 million gallons a day.

RESULTS.

That the Reservoirs with some fluctuation remain full up to the 18th June.

That they were reduced to 6,186.2 million gallons on the 30th October.

That the flow over Teddington Weir was reduced to 250 million gallons a day for 160 days, as compared with an average natural flow during the same period of 430.5 million gallons a day, and an actual average flow of 335.8 million gallons a day during the year 1887.

There were only 29 days in the year 1887 when the actual flow over Teddington Weir was less than 250 million gallons a day.

REFERENCE.

- The Red line shows the Natural flow of the Thames for each day of the year 1887.
- The Blue line shows the effect produced on the flow of the River by the abstraction of the water to fill the Reservoirs and supply London.
- The Blue hatched portions show when the River was in flood and not drawn upon.
- The Green line shows the quantity of water in the Reservoirs on any day in the year.

Flow at Teddington Weir, Vertical = Million gallons.
Contents of Reservoirs, do = do
Horizontal = Days.

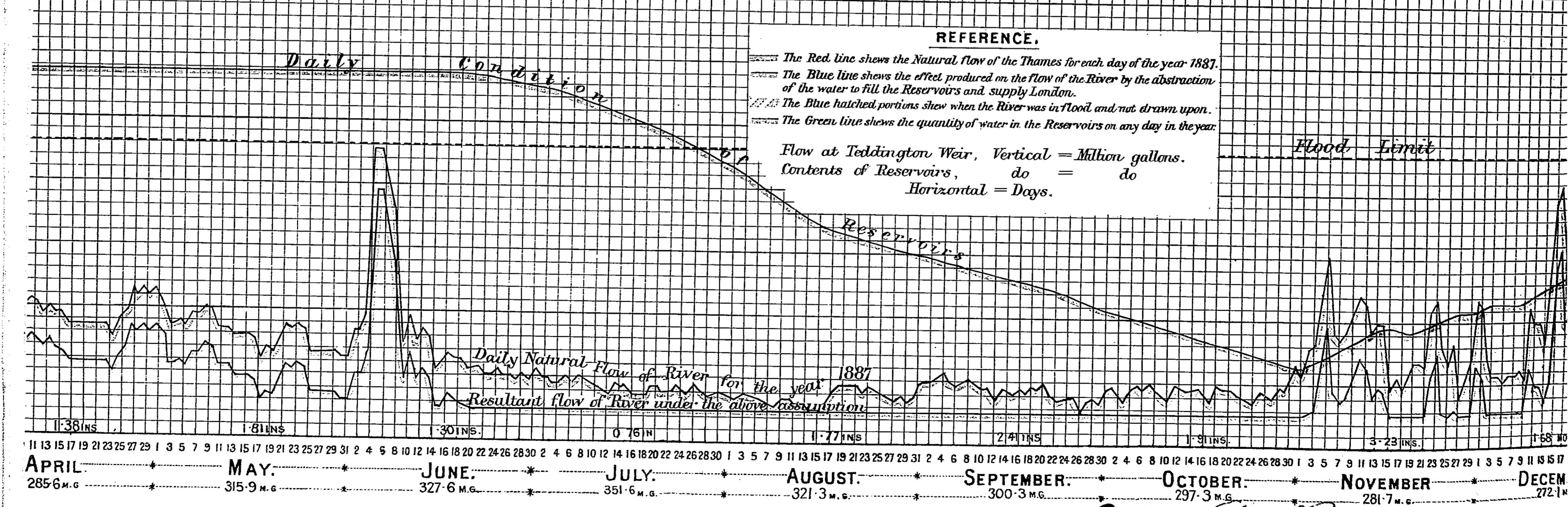


DIAGRAM 7.

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i. See Question

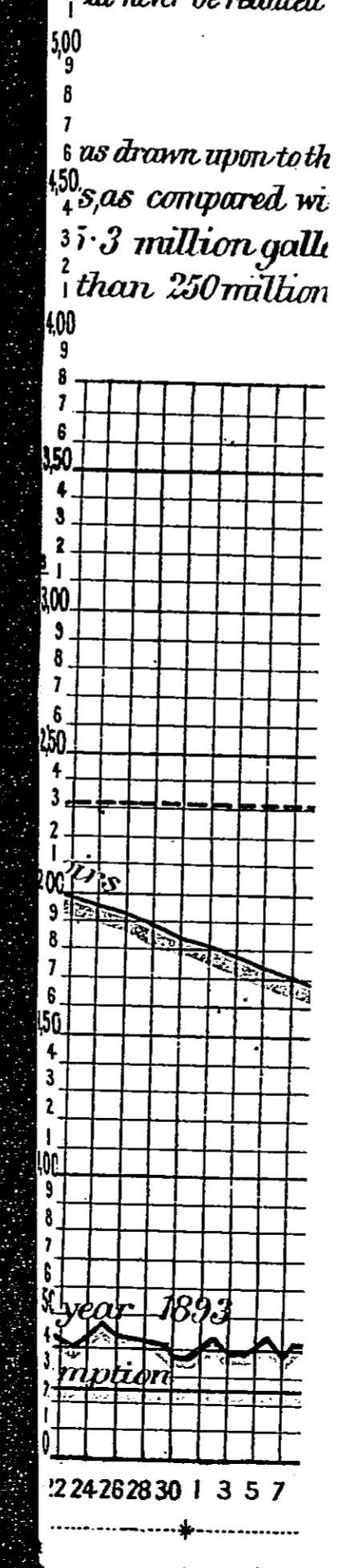
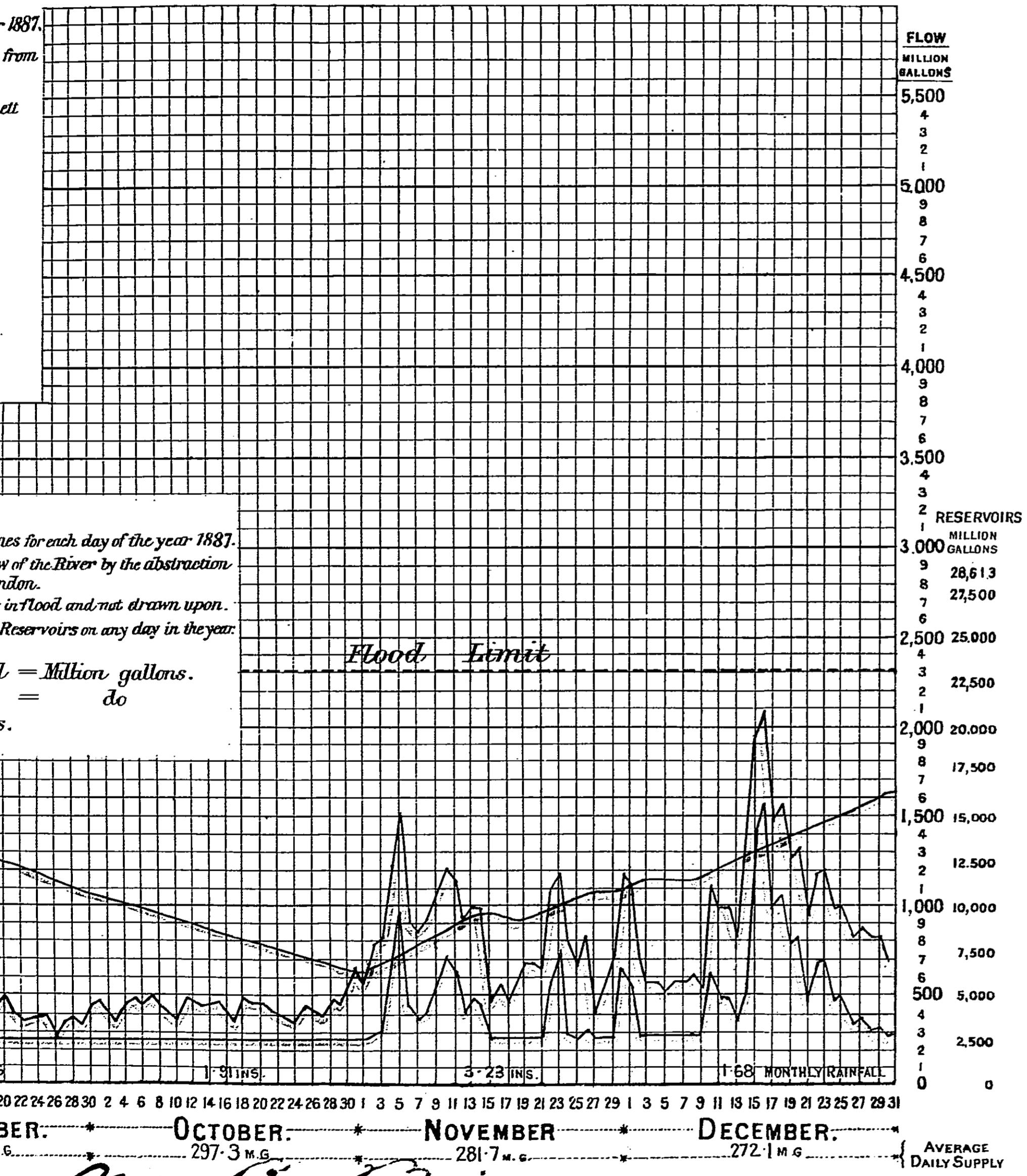


DIAGRAM 7.

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i. See Question

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- (1) That the flow of the River as shown in Red
- (2) That the draught on the River will average 30
- (3) That the constructional capacity of the 19 Reservoirs was 28,613 million gallons.
- (4) That the Reservoirs were full at the commencement of the year.

That the Reservoirs with some fluctuations
That they were drawn down to 19

That the flow over Teddington Weir

in the same period of 422.5 million gallons.

There were only 58 days in the year.

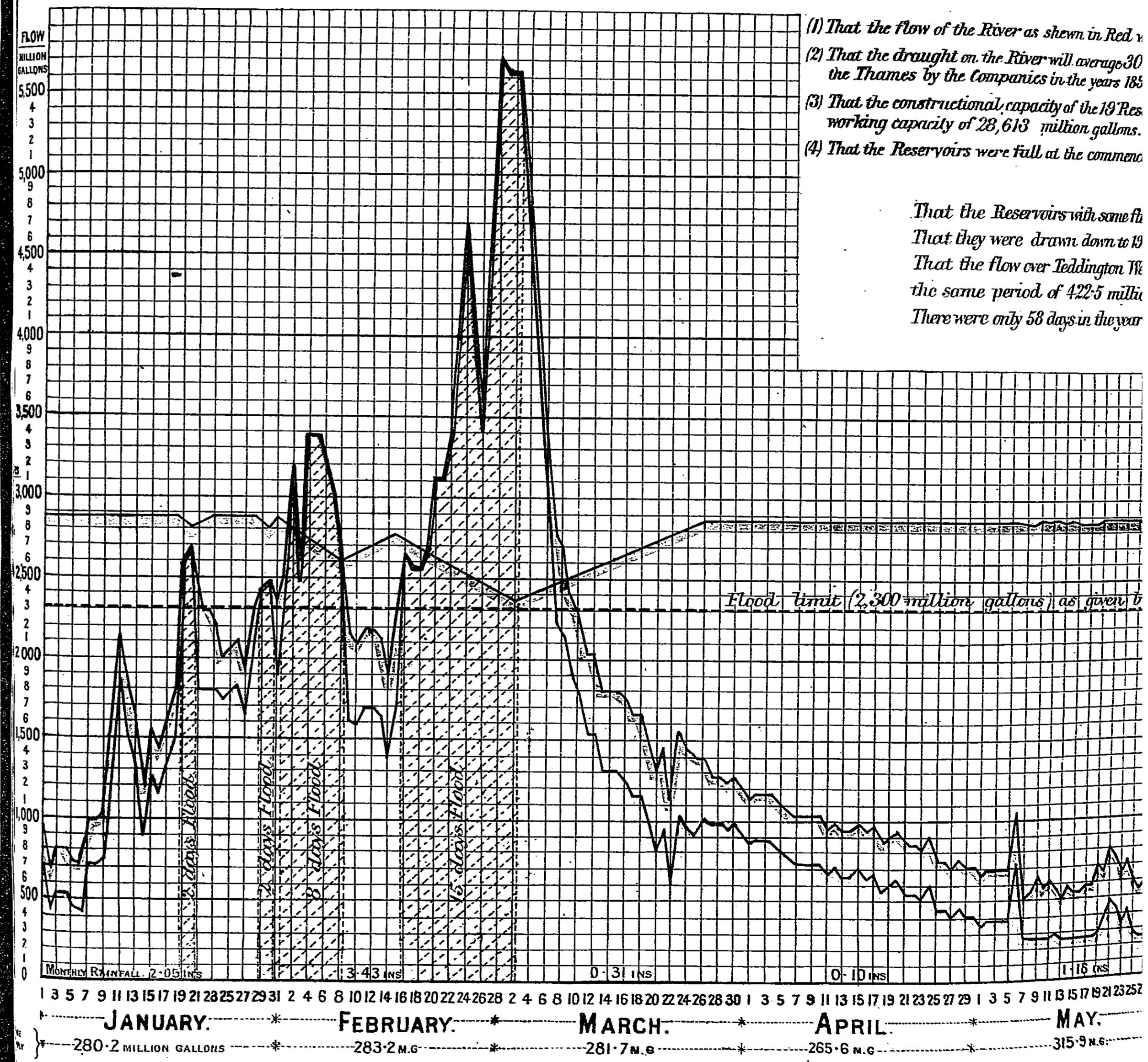


DIAGRAM 7.

(Sir Alexander Binnie's Diagram B³)

Diagram shewing the working of the Staines Reservoir Scheme in such a year as 1893, supplying 300 million gallons a day, with a minimum flow of 250 million gallons over Teddington Weir.

(Handed in by Sir Alexander Binnie on the 22nd Day. See Question 9228.)

IT IS ASSUMED

that the flow of the River as shewn in Red was the Natural Flow over Teddington Weir as it would have been if no water had been taken out by the Water Companies in the year 1893.
that the draught on the River will average 300 million gallons a day, but will be drawn in the different months of the year in the mean proportions which were abstracted from the Thames by the companies in the years 1896-1897.

that the constructional capacity of the 19 Reservoirs will be 38,000 million gallons, less 9,387 million gallons to allow for cleansing, bottom impurity, and evaporation, or a net working capacity of 28,613 million gallons.

that the Reservoirs were full at the commencement of the year and that the flow over Teddington Weir should never be reduced below 250 million gallons a day.

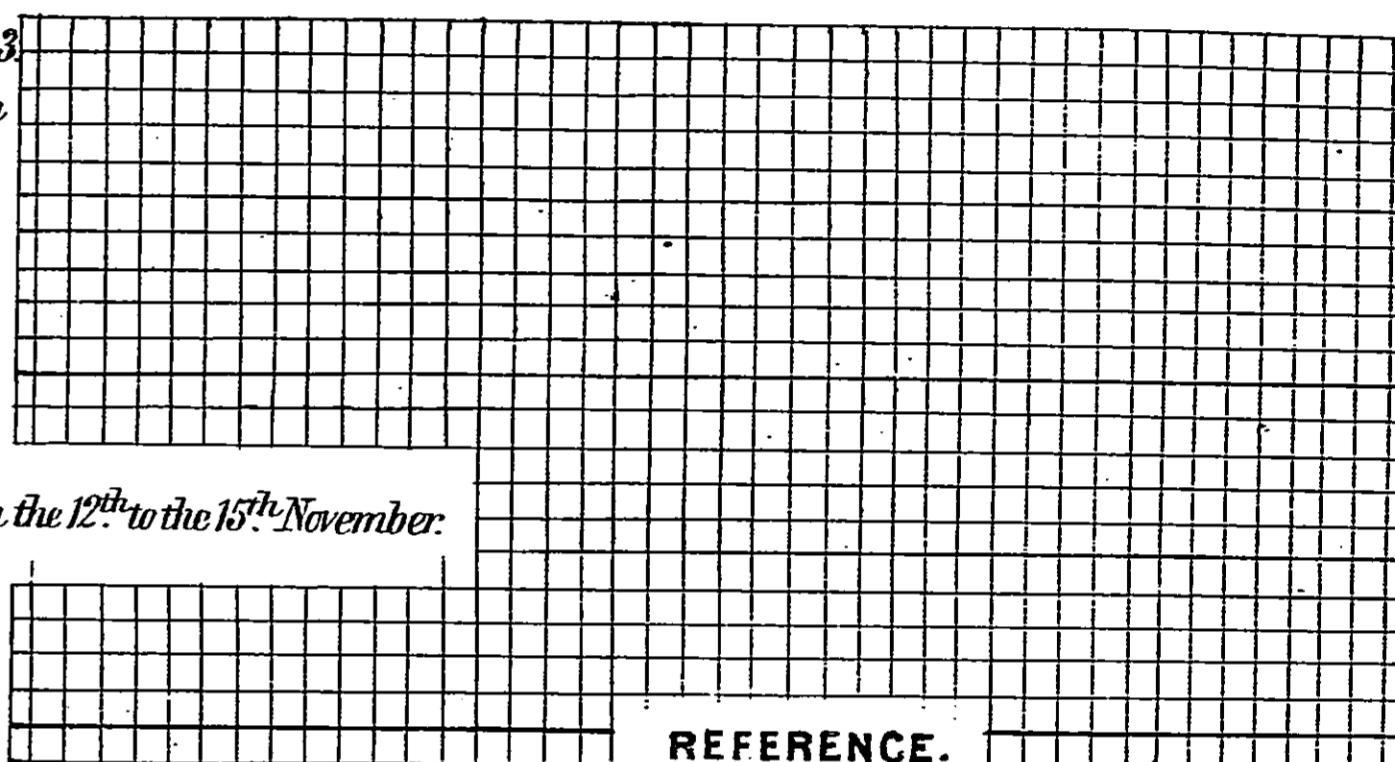
RESULTS.

That the Reservoirs with some fluctuations remain full up to the 25th May.

That they were drawn down to 19084 million gallons on the 9th October and the bottom impurity was drawn upon to the extent of 494 million gallons during the 4 days from the 12th to the 15th November.

That the flow over Teddington Weir was reduced to 250 million gallons a day for 206 days, as compared with an average natural flow during the same period of 422.5 million gallons a day, and an actual average flow of 315.3 million gallons a day during the year 1893.

There were only 58 days in the year 1893 when the actual flow over Teddington Weir was less than 250 million gallons a day.



REFERENCE.

The Red line shews the Natural flow of the Thames for each day of the year 1893.

The Blue line shews the effect produced on the flow of the River by the abstraction of the water to fill the Reservoirs and supply London.

The Blue hatched portions shew when the River was in flood and not drawn upon.

The Green line shews the quantity of water in the Reservoirs on any day in the year.

Flow at Teddington Weir. Vertical = Million gallons.

Contents of Reservoirs, do = do

Horizontal = Days.

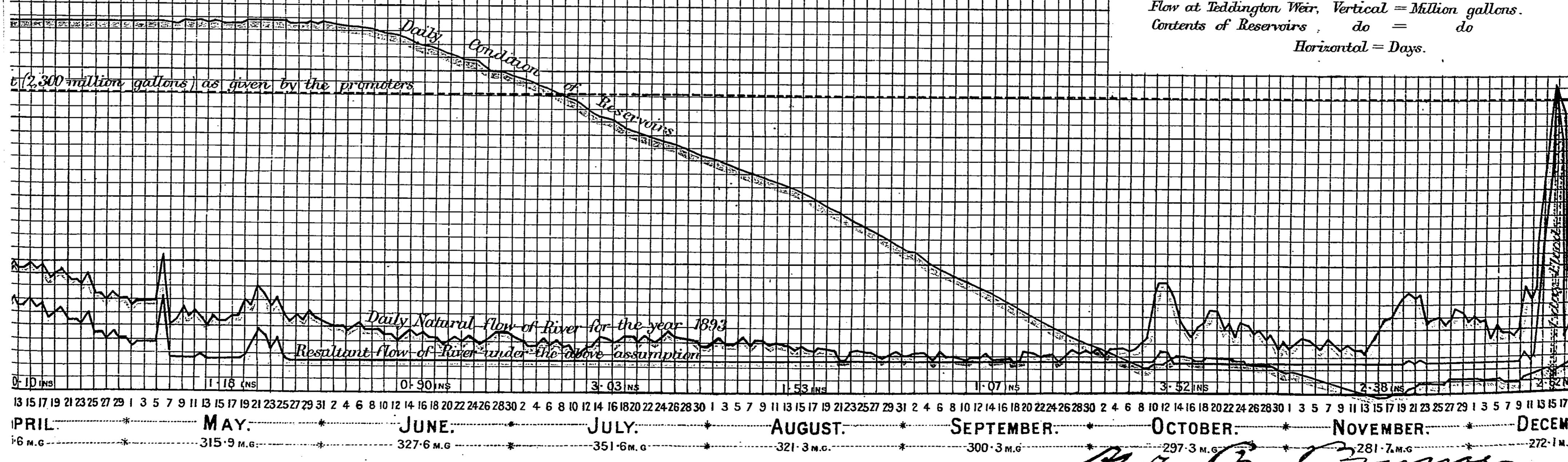
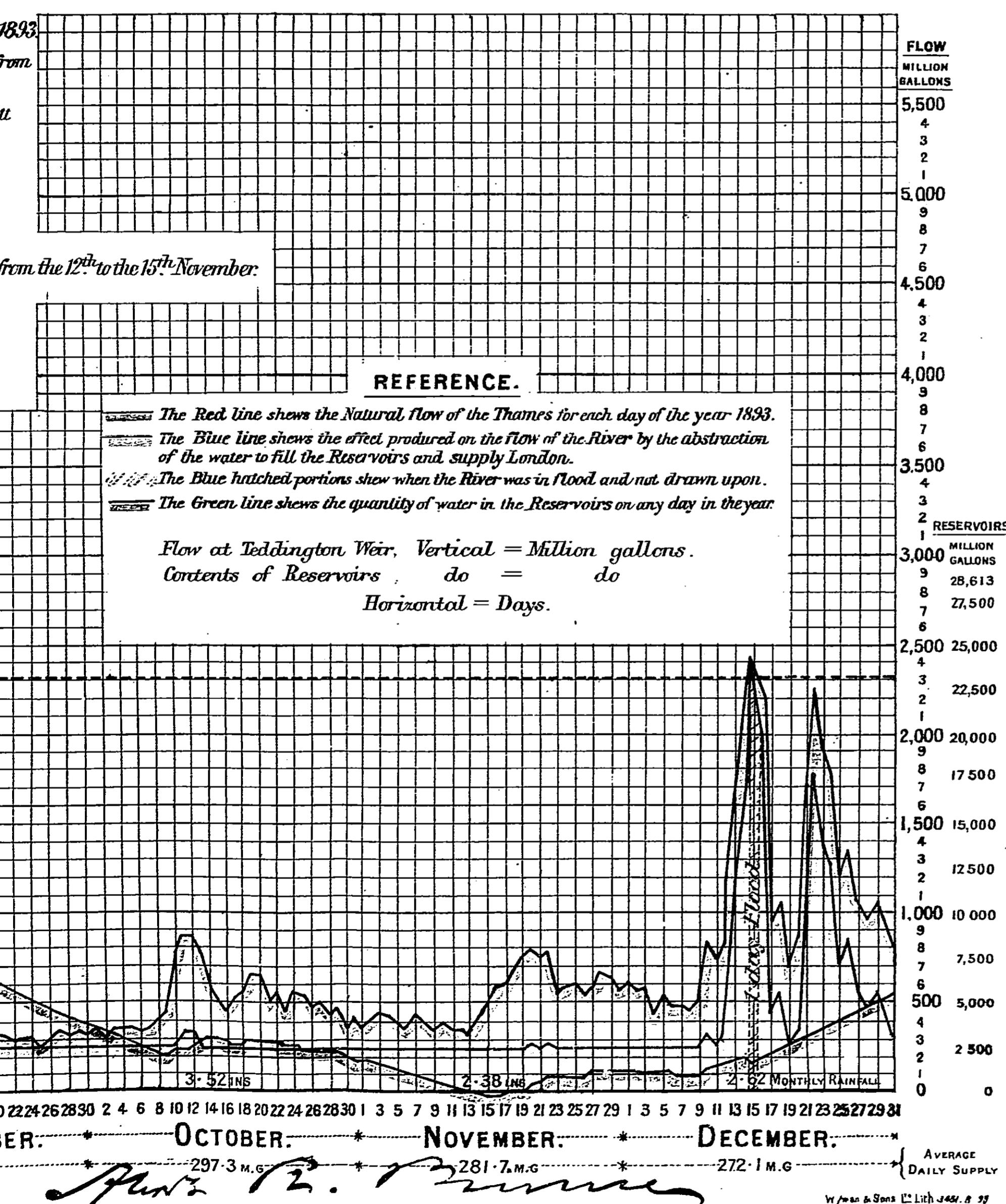


DIAGRAM 8

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See Question 9



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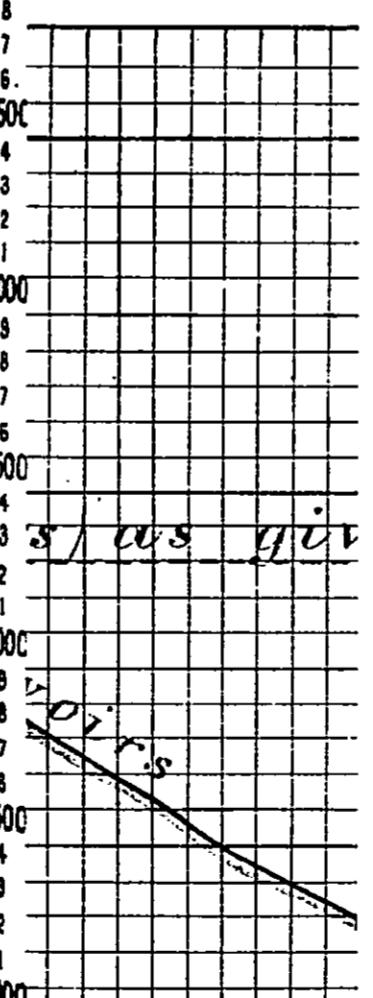


DIAGRAM 8

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- (1) That the flow of the River as shewn in R
- (2) That the draught on the River will average the Thames by the Companies in the year
- (3) That the constructional capacity of the 13 working capacity of 28,613 million gallons
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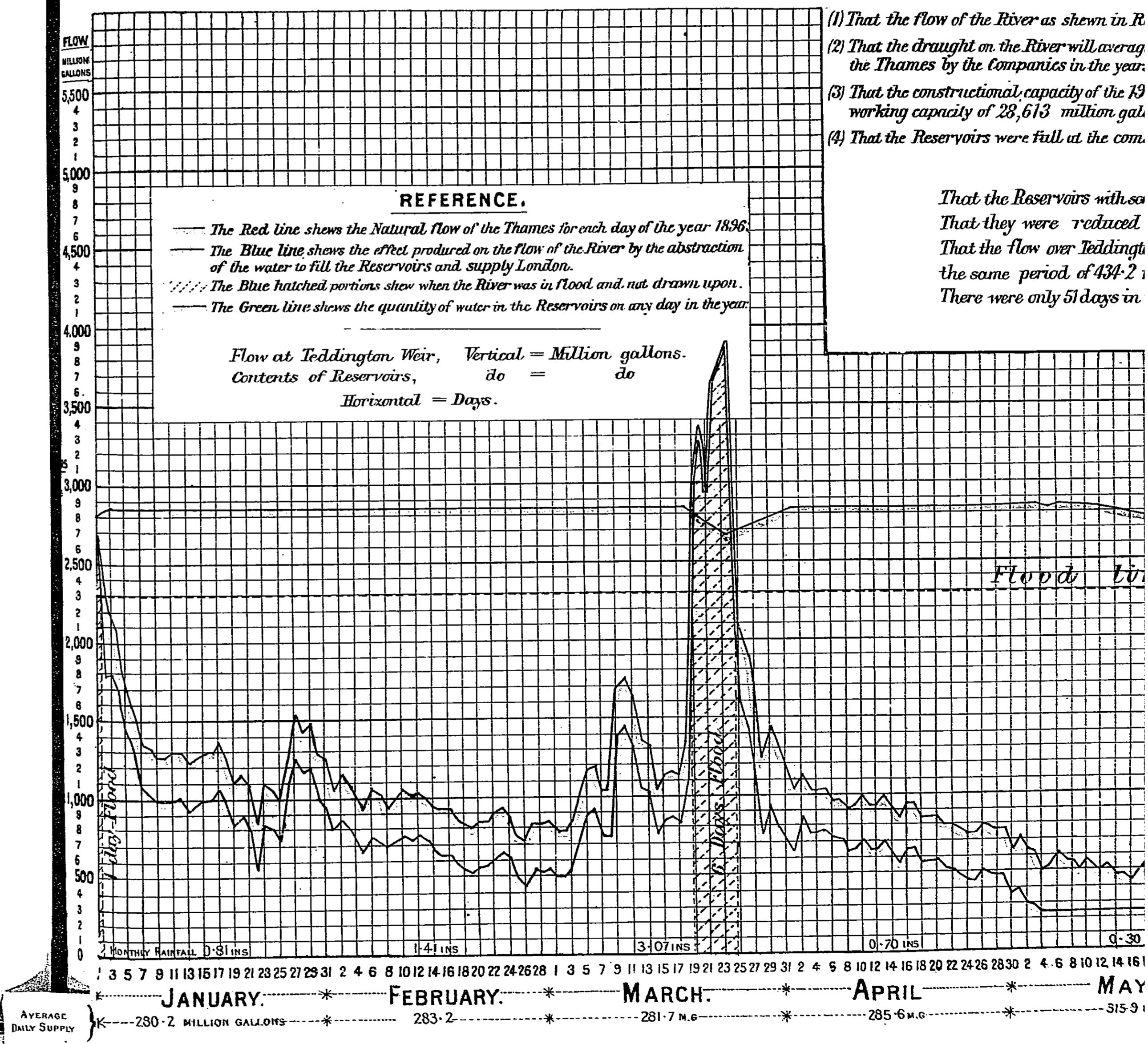


DIAGRAM 8.

(Sir Alexander Binnie's Diagram B⁴.)

Diagram shewing the working of the Staines Reservoir Scheme in such a year as 1896, supplying 300 million gallons a day, with a minimum flow of 250 million gallons over Teddington Weir.

(Handed in by Sir Alexander Binnie on the 22nd Day, See Question 9228.)

IT IS ASSUMED.

that the flow of the River as shewn in Red was the Natural Flow over Teddington Weir as it would have been if no water had been taken out by the Water Companies in the year 1896.
at the draught on the River will average 300 million gallons a day, but will be drawn in the different months of the year in the mean proportions which were abstracted from the Thames by the Companies in the years 1896-1897.

that the constructional capacity of the 19 Reservoirs will be 38,000 million gallons, less 9,387 million gallons to allow for cleansing, bottom impurity, and evaporation, or a net working capacity of 28,613 million gallons.

that the Reservoirs were full at the commencement of the year and that the flow over Teddington Weir should never be reduced below 250 million gallons a day.

RESULTS.

That the Reservoirs with some fluctuations remain full up to the 3rd May.

That they were reduced to 7,843.8 million gallons on 1st September.

That the flow over Teddington Weir was reduced to 250 million gallons a day for 136 days, as compared with an average natural flow during the same period of 434.2 million gallons a day, and an actual average flow of 309.6 million gallons a day, during the year 1896.

There were only 51 days in the year 1896 when the actual flow over Teddington Weir was less than 250 million gallons a day.

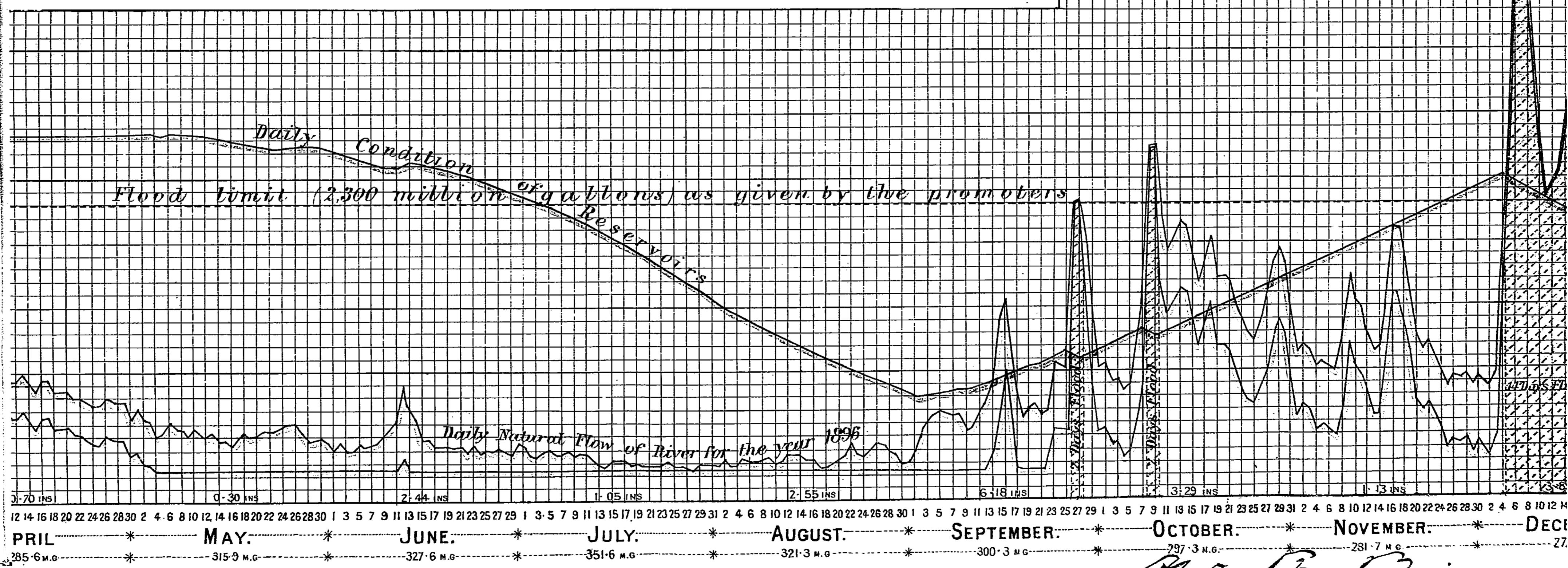
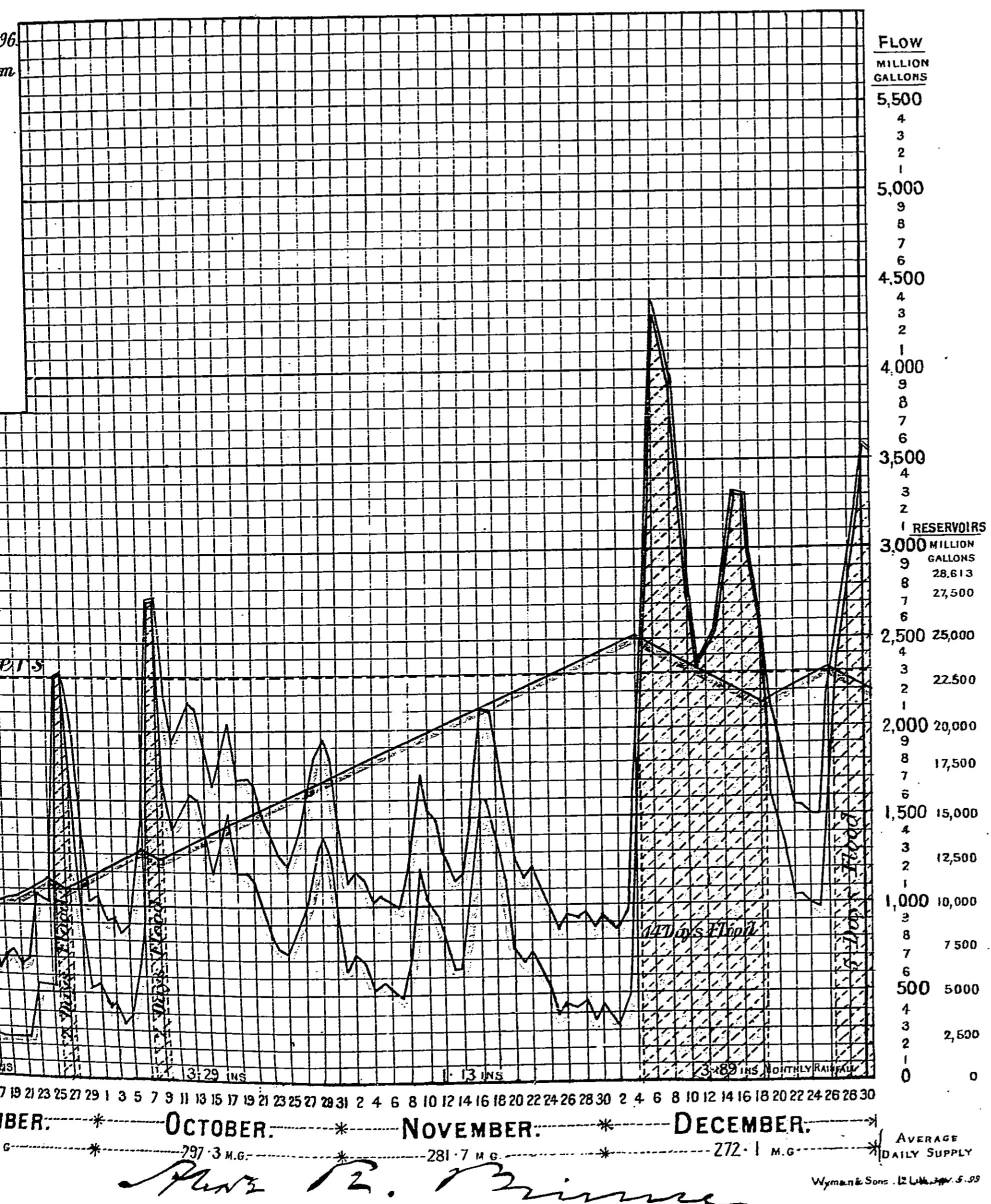


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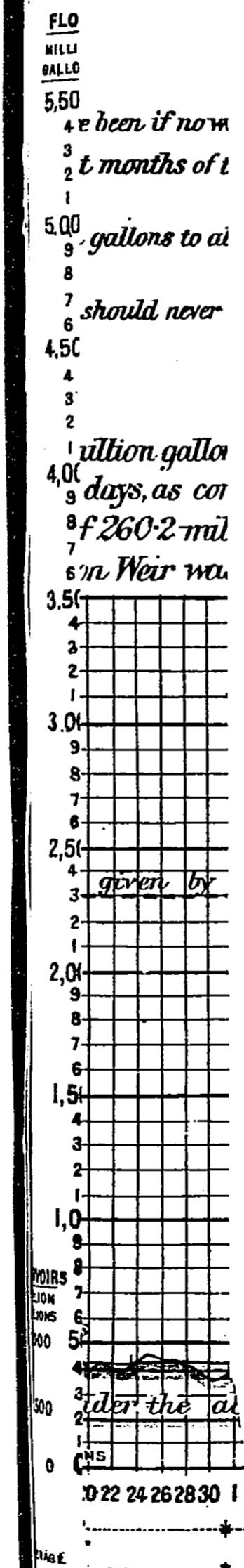
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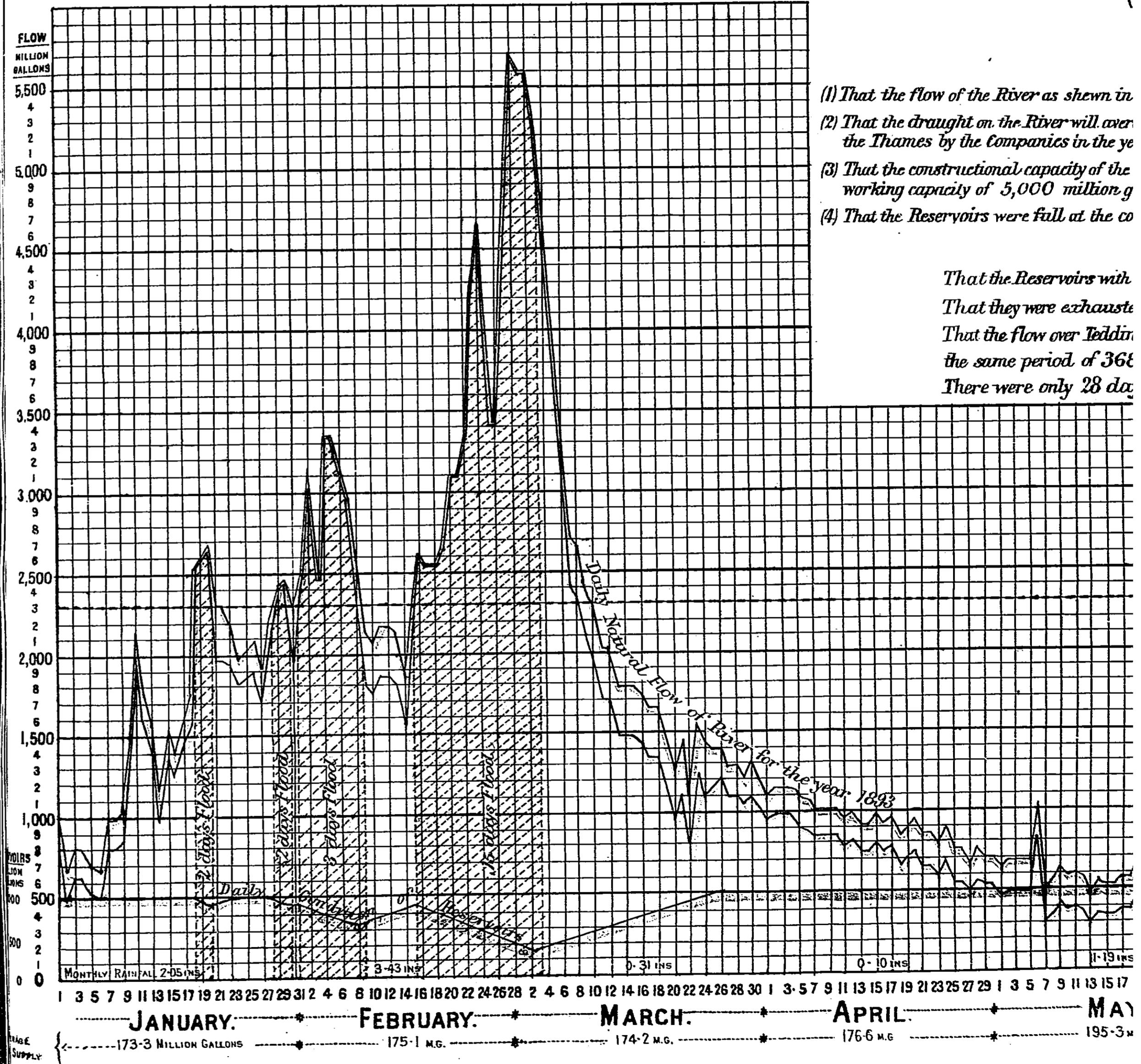
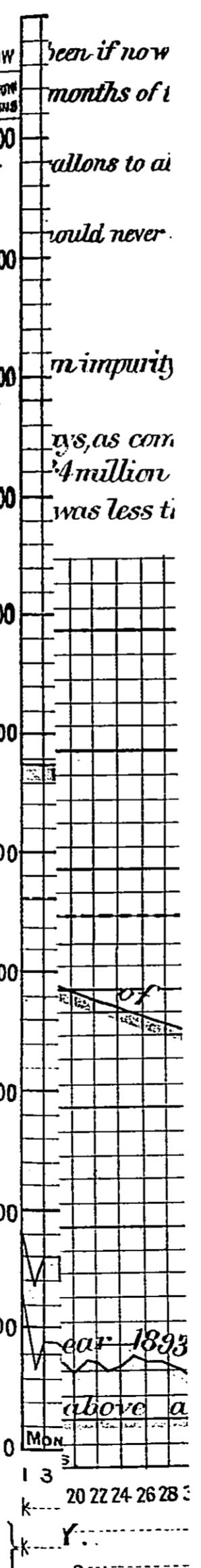


DIAGRAM 10.

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REFERENCE.

Red line shows the Natural flow of the Thames for each day of the year 1893.
Blue line shows the effect produced on the flow of the River by the abstraction
of water to fill the Reservoirs and supply London.
Blue hatched portions show when the River was in flood and not drawn upon.
Green line shows the quantity of water in the Reservoirs on any day in the year.

at Teddington Weir, Vertical = Million gallons.
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Horizontal = Days.

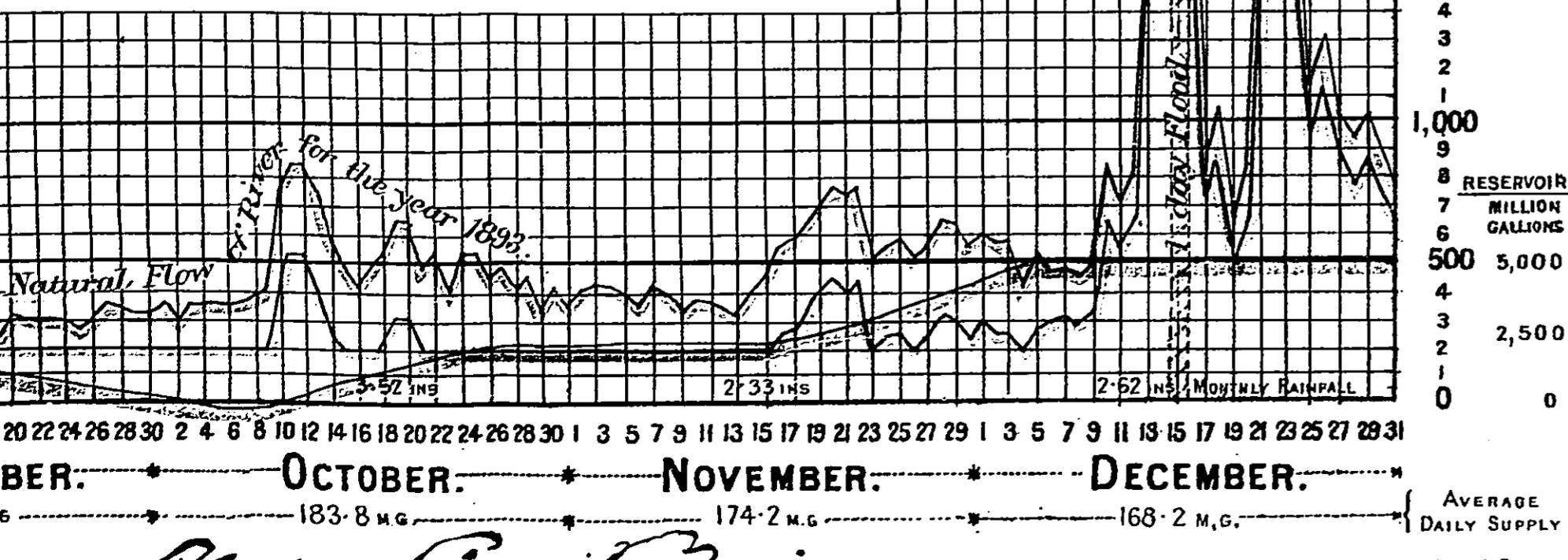


DIAGRAM 10.

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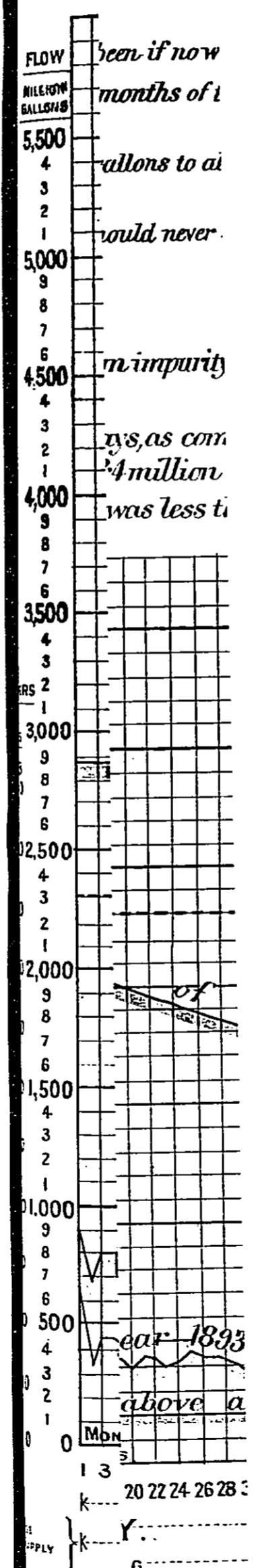


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- (1) That the flow of the River as shewn in the diagram
- (2) That the draught on the River will average 330.4 million gallons by the Companies in the years
- (3) That the constructional capacity of the 19 Reservoirs will be 28,613 million gallons per annum, giving a working capacity of 28,613 million gallons per annum.
- (4) That the Reservoirs were full at the commencement of the year 1911.

That the Reservoirs will supply 330.4 million gallons per annum.
That they were drawn down to 28,613 million gallons during the year 1911.
That the flow over Teddington Lock was 429.6 million gallons per annum during the same period of 429.6 million gallons per annum.
There were only 28 days of 1911.

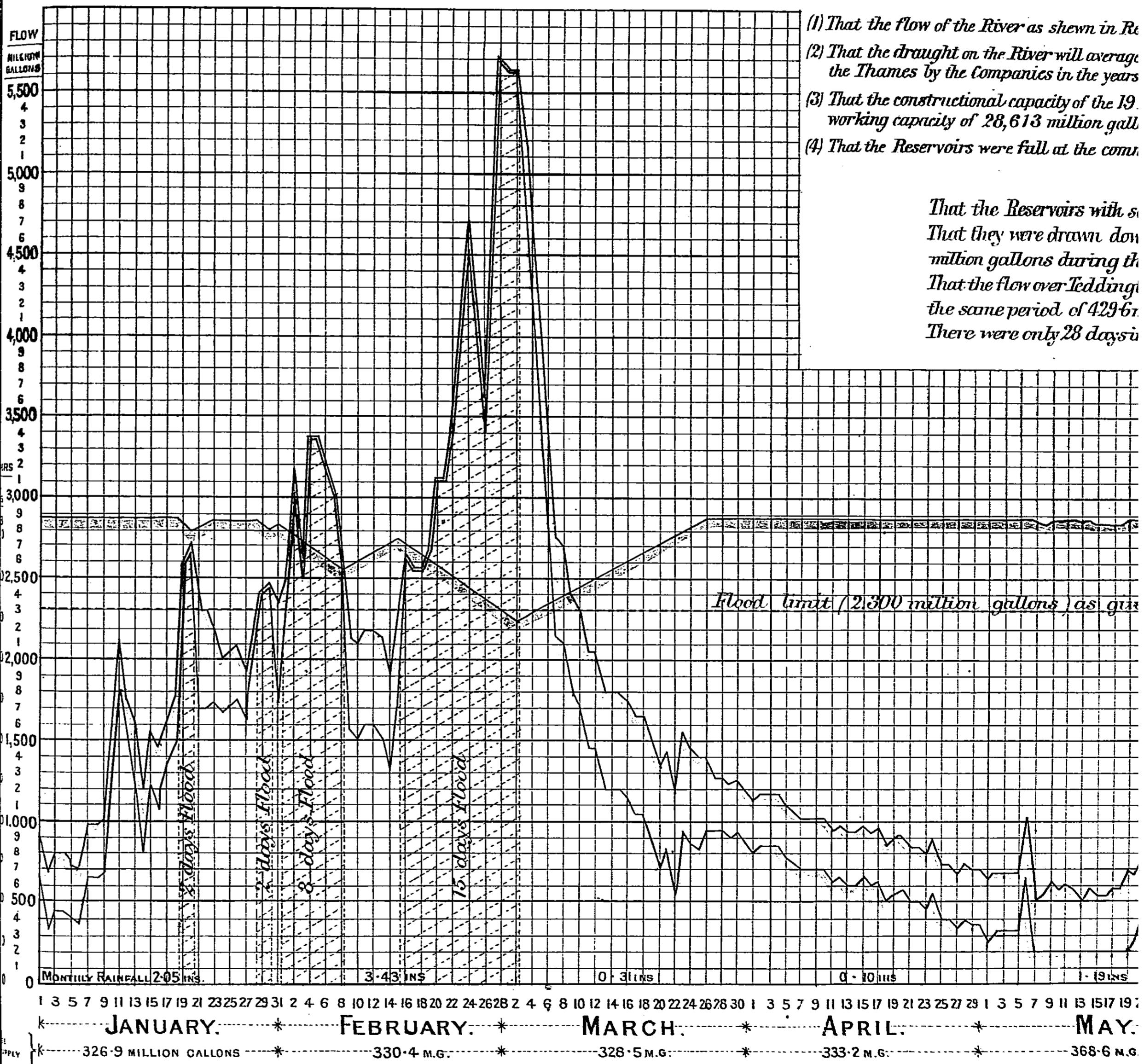


DIAGRAM 10.

(Sir Alexander Binnie's Diagram D.)

Diagram shewing the working of the Staines Reservoir Scheme in such a year as 1893, supplying 350 million gallons a day, with a minimum flow of 200 million gallons over Teddington Weir.

(Handed in by Sir Alexander Binnie on the 24th Day. See Question 10,337.)

IT IS ASSUMED.

that the flow of the River as shewn in Red was the Natural Flow over Teddington Weir as it would have been if no water had been taken out by the Water Companies in the year 1893.
that the draught on the River will average 350 million gallons a day, but will be drawn in the different months of the year in the mean proportions which were abstracted from the Thames by the Companies in the years 1896-1897.

that the constructional capacity of the 19 Reservoirs will be 38,000 million gallons, less 9,387 million gallons to allow for cleansing bottom impurity, and evaporation, or a net working capacity of 28,613 million gallons.

that the Reservoirs were full at the commencement of the year and that the flow over Teddington Weir should never be reduced below 200 million gallons a day.

RESULTS.

That the Reservoirs with some fluctuation remain full up to the 25th May.

That they were drawn down to 1,377.5 million gallons on the 9th October, and the bottom impurity was drawn upon to the extent of 895.3 million gallons during the 6 days from the 10th to the 15th November.

That the flow over Teddington Weir was reduced to 200 million gallons a day for 211 days, as compared with an average natural flow during the same period of 429.6 million gallons a day, and an actual average flow of 322.4 million gallons a day, during the year 1893.

There were only 28 days in the year 1893 when the actual flow over Teddington Weir was less than 200 million gallons a day.

REFERENCE.

The Red line shews the Natural flow of the Thames for each day of the year 1893.

The Blue line shews the effect produced on the flow of the River by the abstraction of the water to fill the Reservoirs and supply London.

//// The Blue hatched portions shew when the River was in flood and not drawn up.

— The Green line shew the quantity of water in the Reservoirs on any day in the year 1893.

Flow at Teddington Weir; Vertical = Million gallons.

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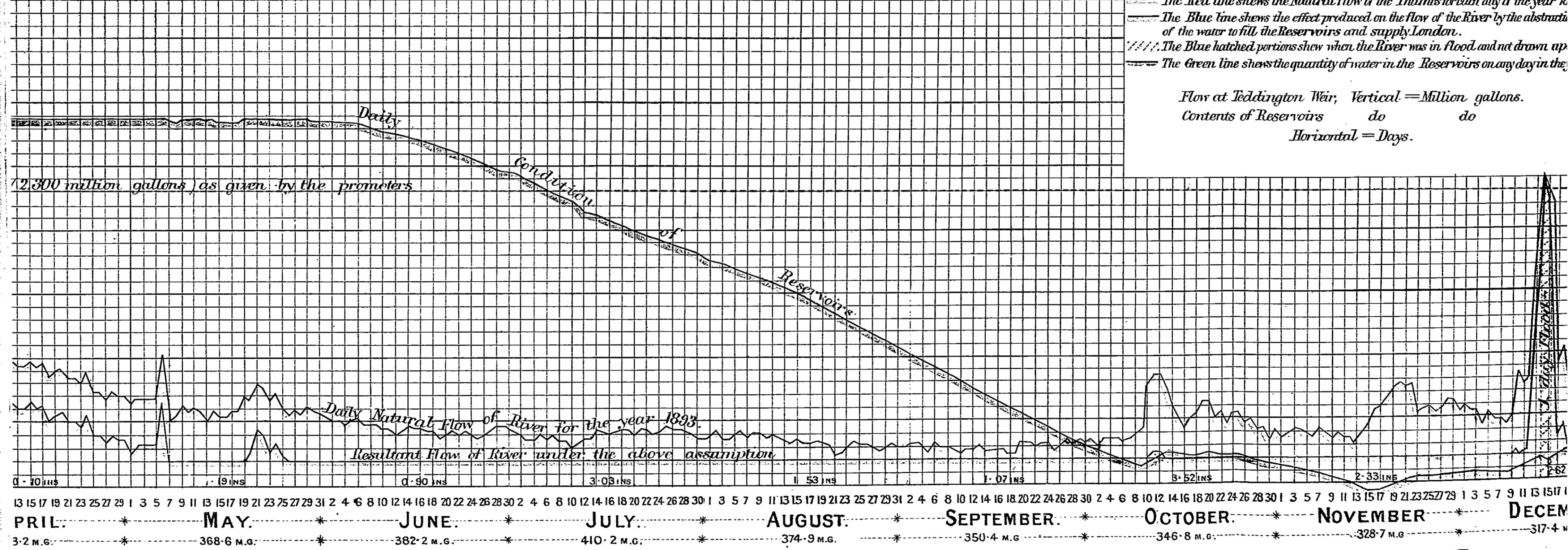


DIAGRAM 9.

(Sir Alexander Binnie's Diagram C.)

Diagram shewing the working of the Staines Reservoir Scheme in such a year as 1893, supplying 185½ million gallons, with a minimum flow of 200 million gallons over Teddington Weir.

(Handed in by Sir Alexander Binnie on the 22nd Day. See Question 9342)

IT IS ASSUMED

- 1) That the flow of the River as shewn in Red was the Natural Flow over Teddington Weir as it would have been if no water had been taken out by the Water Companies in the year 1893.
- 2) That the draught on the River will average 185½ million gallons a day, but will be drawn in the different months of the year in the mean proportions which were abstracted from the Thames by the Companies in the years 1896-1897.
- 3) That the constructional capacity of the 4 Reservoirs will be 8,000 million gallons, less 3,000 million gallons to allow for cleansing, bottom impurity, and evaporation, or a nett working capacity of 5,000 million gallons.
- 4) That the Reservoirs were full at the commencement of the year and that the flow over Teddington Weir should never be reduced below 200 million gallons a day.

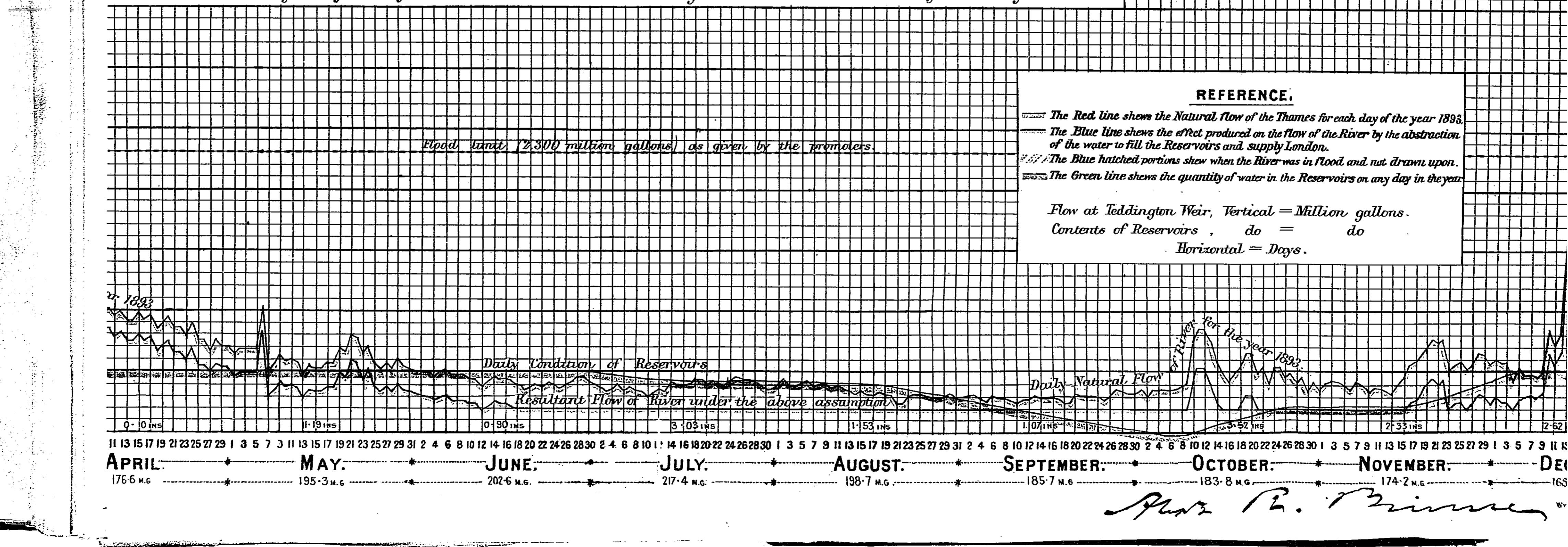
RESULTS.

That the Reservoirs with some fluctuation remain full up to the 18th June.

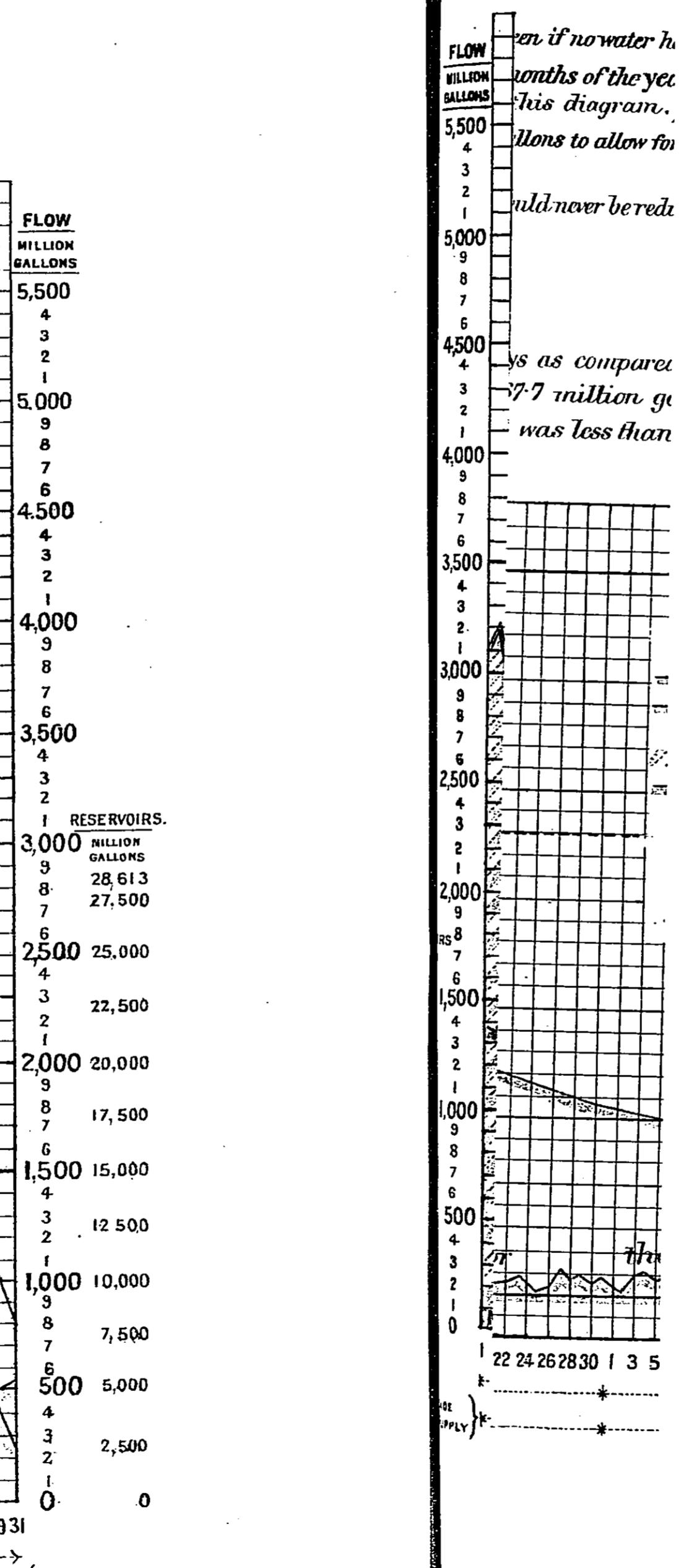
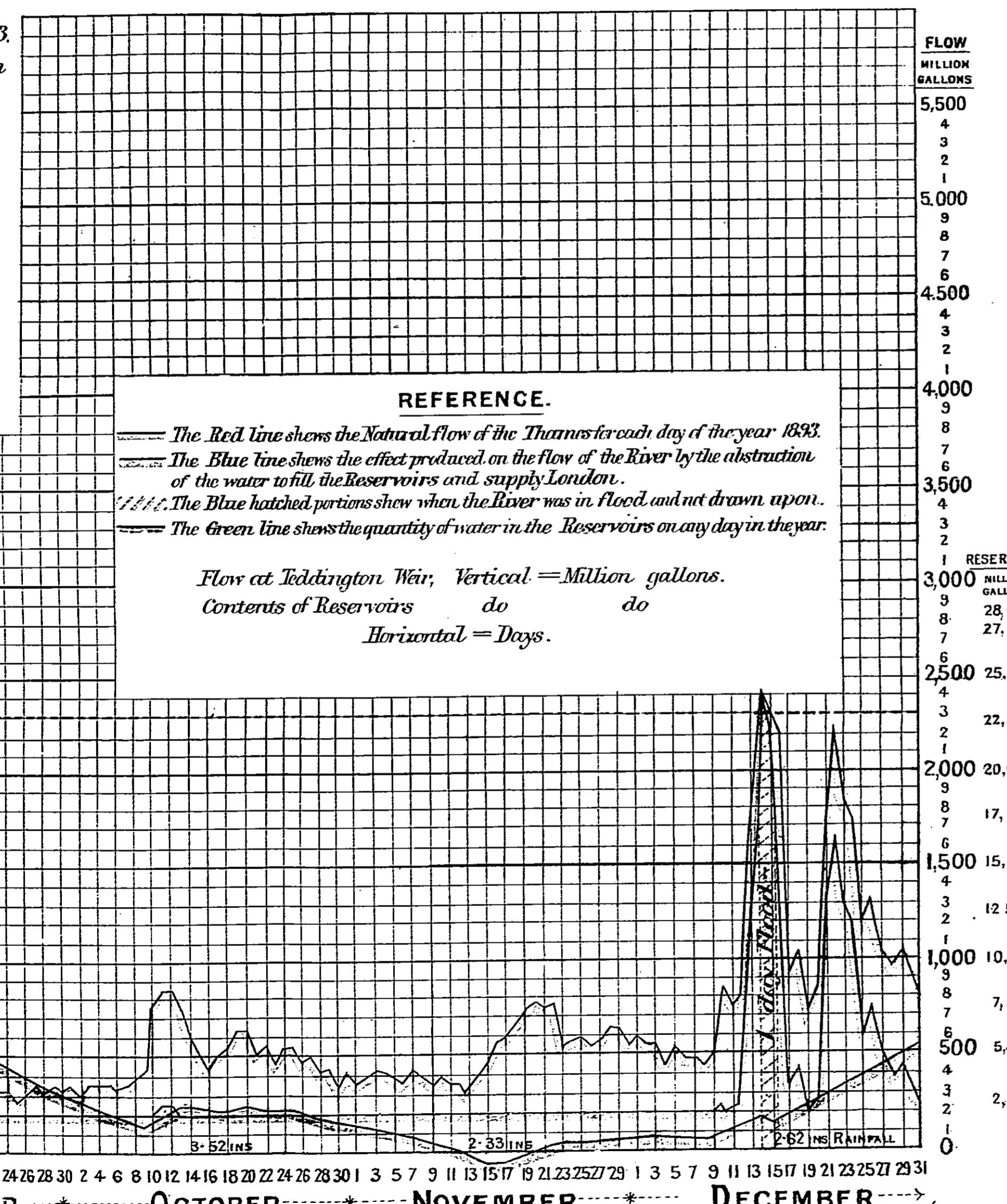
That they were exhausted; and the bottom impurity drawn upon to the extent of 75·5 million gallons during the 4 days from the 4th to the 7th October.

That the flow over Teddington Weir was reduced to 200 million gallons a day for 142 days, as compared with an average natural flow during the same period of 368·1 million gallons a day, and an actual average flow of 260·2 million gallons a day, during the year 1893.

There were only 28 days in the year 1893 when the actual flow over Teddington Weir was less than 200 million gallons a day.



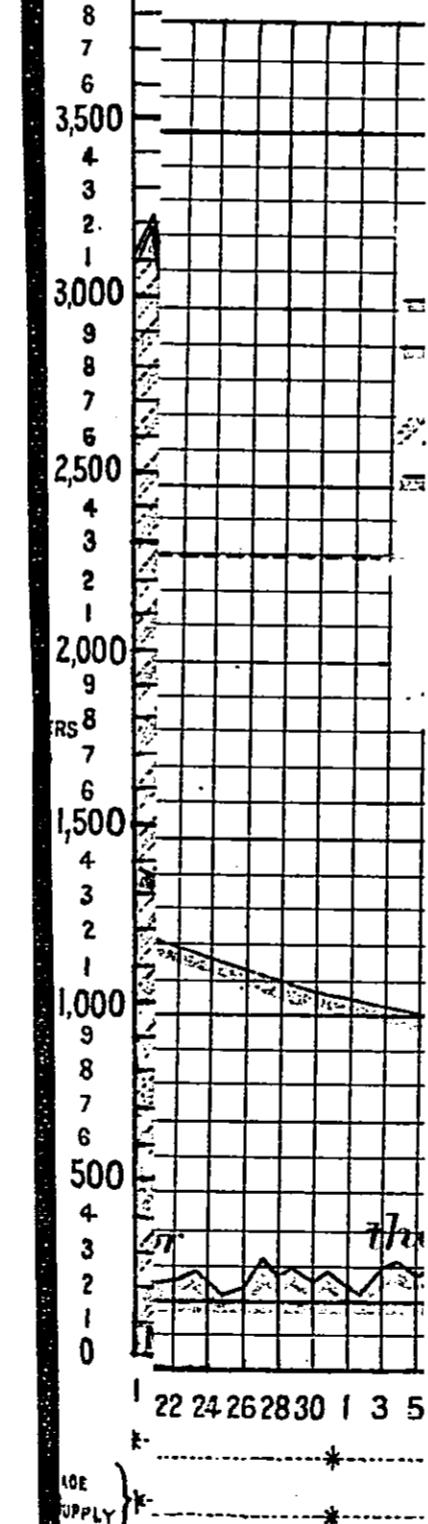
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- (3) That the constructional capacity of the working capacity of 14,000 million gal
- (4) That the Reservoirs were full at the com

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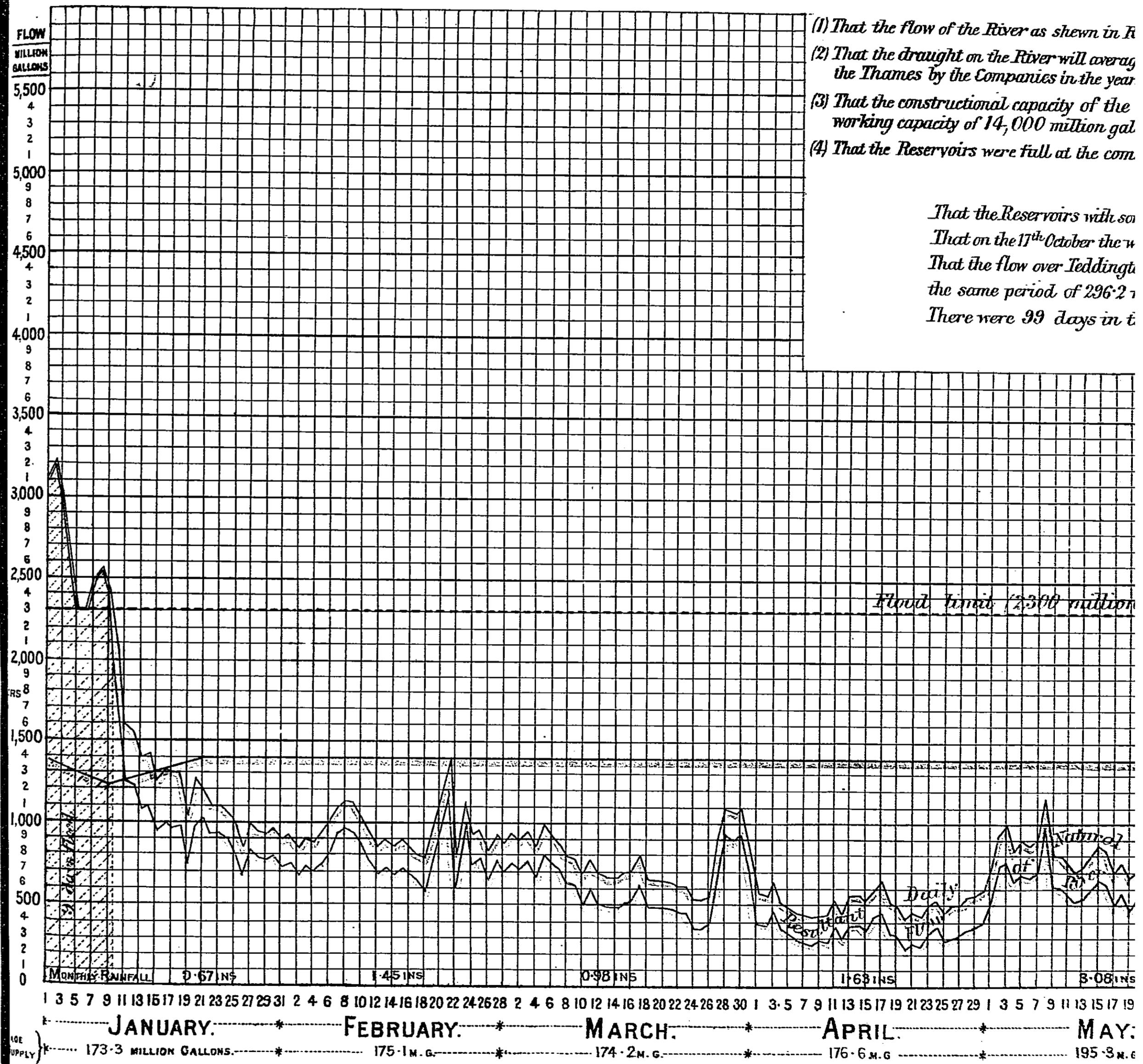


DIAGRAM II.

(Sir Alexander Binnie's Diagram E.)

Diagram shewing the working of the Staines Reservoir Scheme in such a year as 1898, supplying 185½ million gallons a day, with a minimum flow of 200 million gallons over Teddington Weir.

(Handed in by Sir Alexander Binnie on the 47th Day. See Question 23,163.)

IT IS ASSUMED.

at the flow of the River as shewn in Red was the Natural Flow over Teddington Weir as it would have been if no water had been taken out by the Water Companies in the year 1898.
at the draught on the River will average $185\frac{1}{2}$ million gallons a day, but will be drawn in the different months of the year in the mean proportions which were abstracted from
the Thames by the Companies in the years 1896-1897. (See Table N^o 35 p. 1392 of Notes, and bottom of this diagram.)

at the constructional capacity of the Reservoirs will be 18,000 million gallons, less 4,000 million gallons to allow for cleansing bottom impurity and evaporation, or a net working capacity of 14,000 million gallons.

at the Reservoirs were full at the commencement of the year and that the flow over Teddington Weir should never be reduced below 200 million gallons a day.

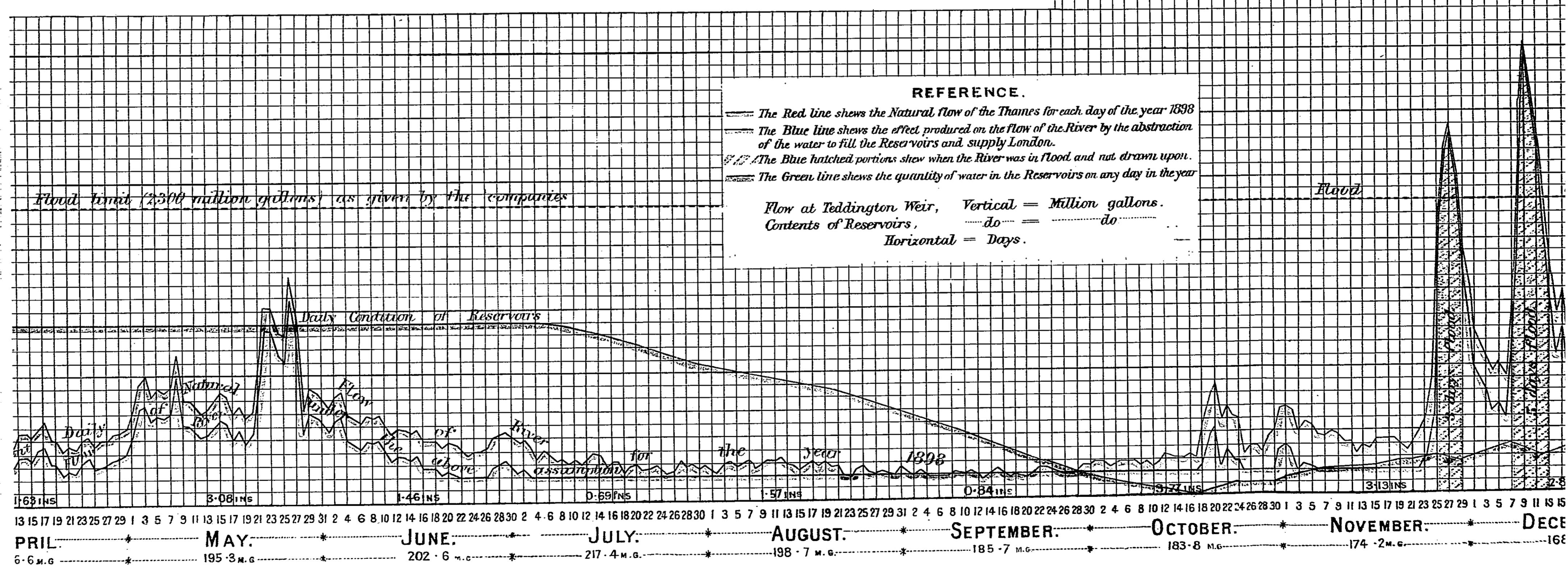
RESULTS.

That the Reservoirs with some fluctuation remain full up to the 2nd July.

That on the 17th October the water in the Reservoirs was reduced to 30.3 million gallons.

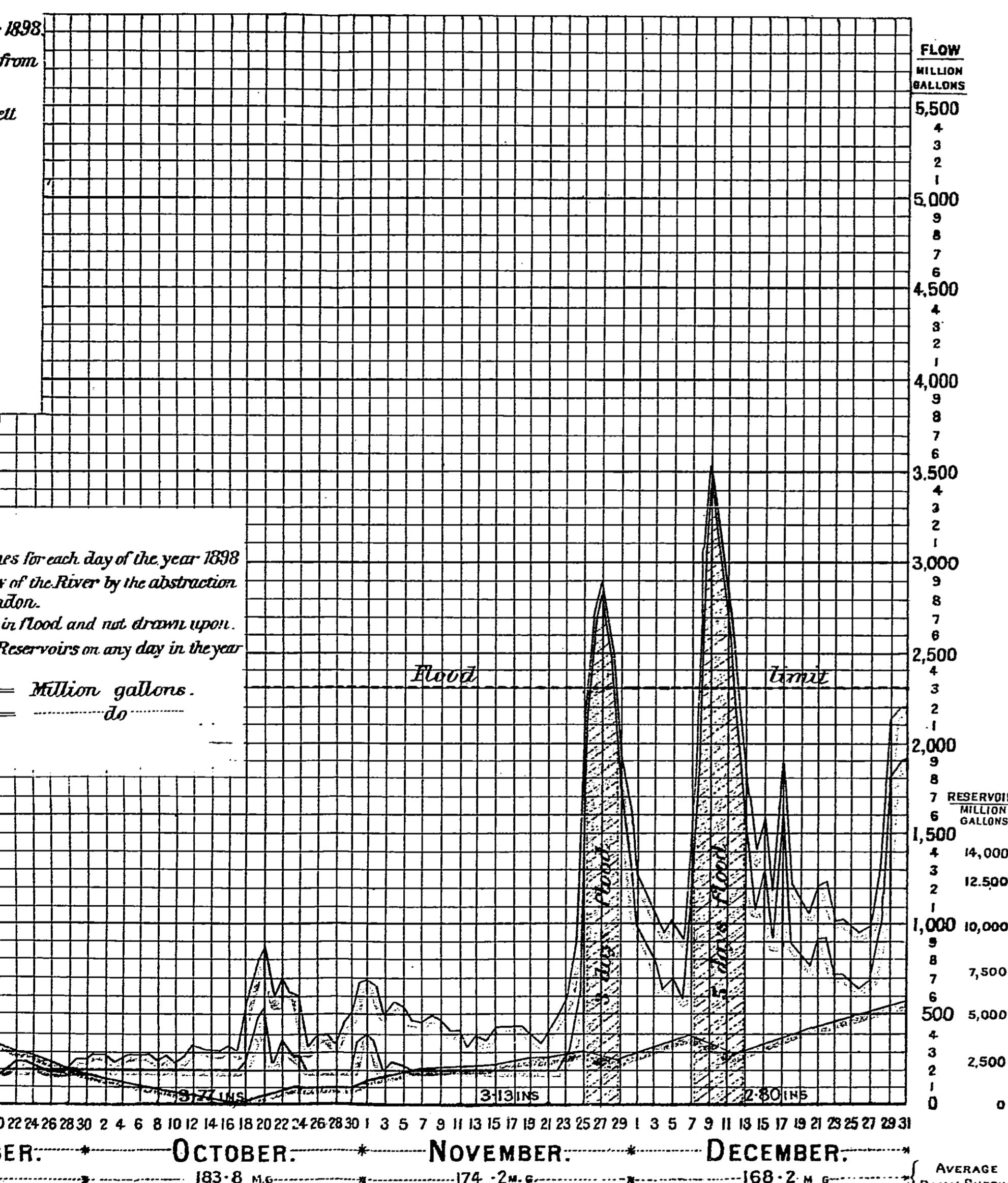
That the flow over Teddington Weir was reduced to 200 million gallons a day for 135 days as compared with an average natural flow during the same period of 296.2 million gallons a day and an actual average flow of 167.7 million gallons a day during the year 1898.

There were 99 days in the year 1898 when the actual flow over Teddington Weir was less than 200 million gallons a day.



John R. Brinner

DIAGRAM 12



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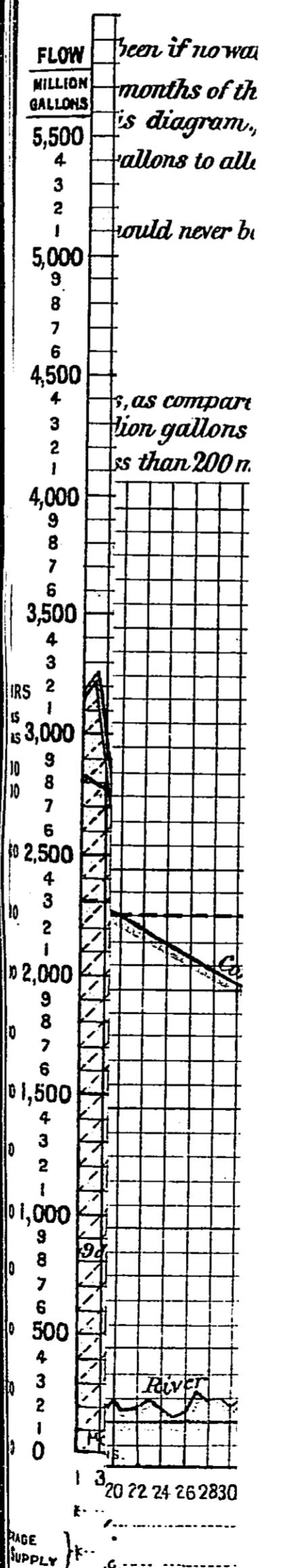
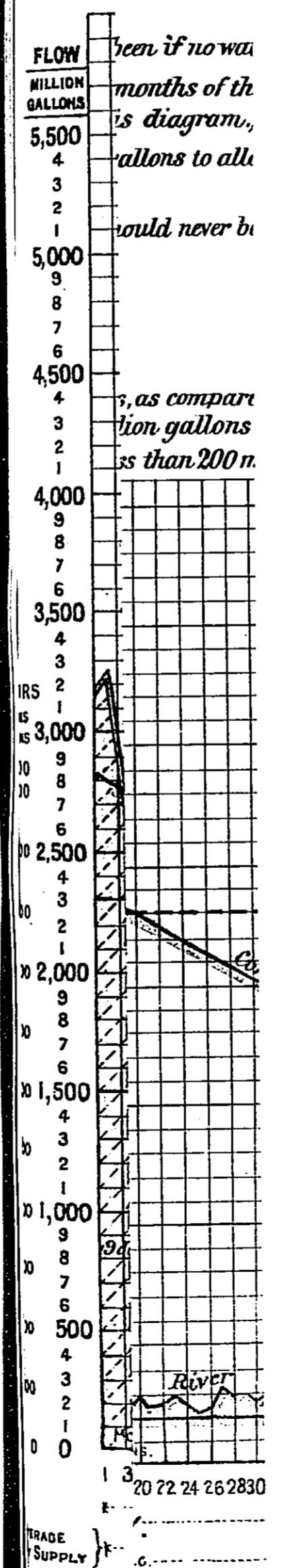


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- (1) That the flow of the River as shewn in
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 (3) That the constructional capacity of t
 working capacity of 28,500 million g
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 the same period of 34
 There were 99 days

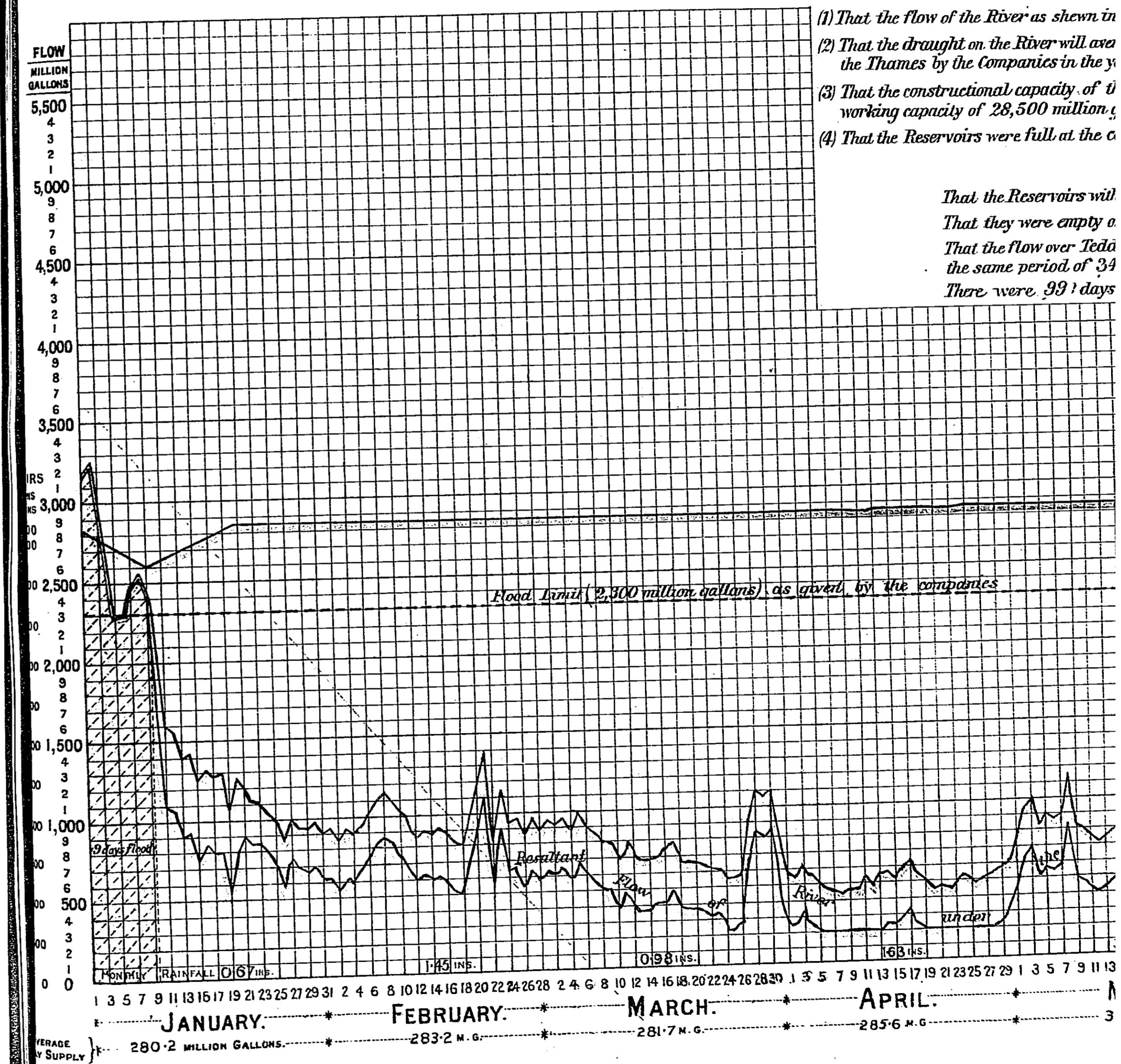


DIAGRAM 12.

(Sir Alexander Binnie's Diagram F.)

Diagram shewing the working of the Staines Reservoir Scheme in such a year as 1898, supplying 300 million gallons a day, with a minimum flow of 200 million gallons over Teddington Weir.

(Handed in by Sir Alexander Binnie on the 27th Day. See Question 23,163.)

IT IS ASSUMED

- (1) That the flow of the River as shewn in Red was the Natural Flow over Teddington Weir as it would have been if no water had been taken out by the Water Companies in the year 1898.
- (2) That the draught on the River will average 300 million gallons a day, but will be drawn in the different months of the year in the mean proportions which were abstracted from the Thames by the Companies in the years 1896-1897. (See Table N° 35 p. 1392 of Notes, and bottom of this diagram.)
- (3) That the constructional capacity of the Reservoirs will be 36,500 million gallons, less 8,000 million gallons to allow for cleansing bottom impurity and evaporation or a nett working capacity of 28,500 million gallons.
- (4) That the Reservoirs were full at the commencement of the year and that the flow over Teddington Weir should never be reduced below 200 million gallons a day.

RESULTS.

That the Reservoirs with some fluctuation remain full up to the 15th June.

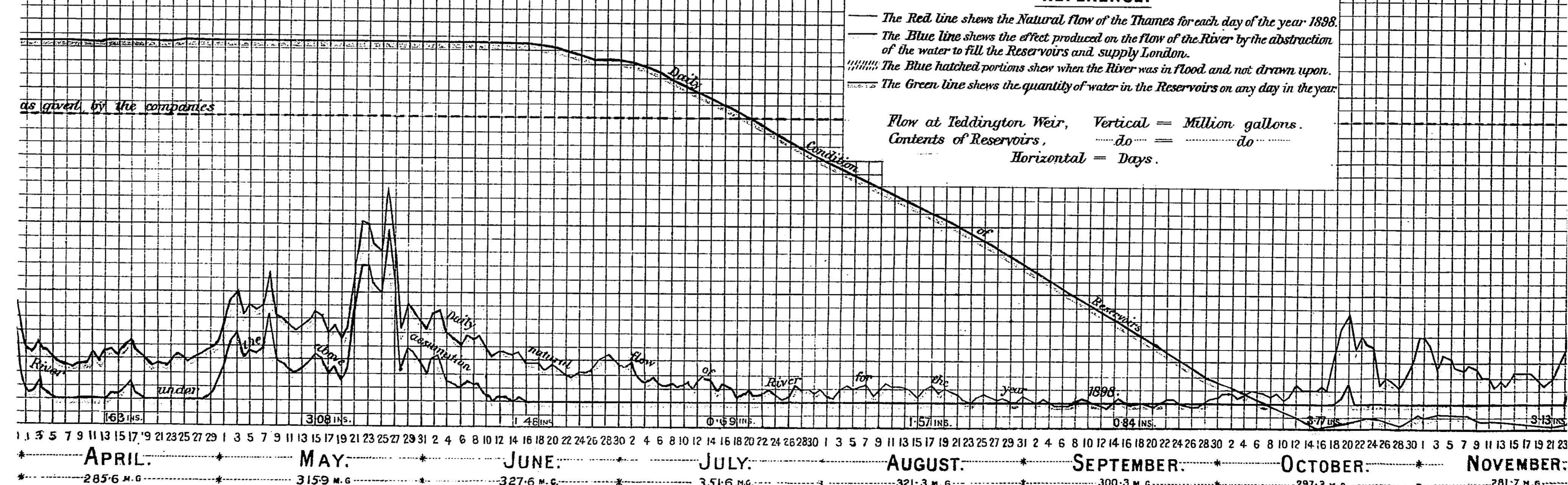
That they were empty on 17th October and 28th November.

*That the flow over Teddington Weir was reduced to 200 million gallons a day for 174 days, as compared with an average natural flow during the same period of 345.2 million gallons a day, and an actual average flow of 219.1 million gallons a day during the year 1898.
There were 99 days in the year 1898 when the actual flow over Teddington Weir was less than 200 million gallons a day.*

REFERENCE.

- The Red line shews the Natural flow of the Thames for each day of the year 1898.
- The Blue line shews the effect produced on the flow of the River by the abstraction of the water to fill the Reservoirs and supply London.
- ||||||| The Blue hatched portions shew when the River was in flood and not drawn upon.
- The Green line shews the quantity of water in the Reservoirs on any day in the year as given by the companies

Flow at Teddington Weir, Vertical = Million gallons.
Contents of Reservoirs, do = do
Horizontal = Days.



R. B. Binnie

DIAGRAM 13

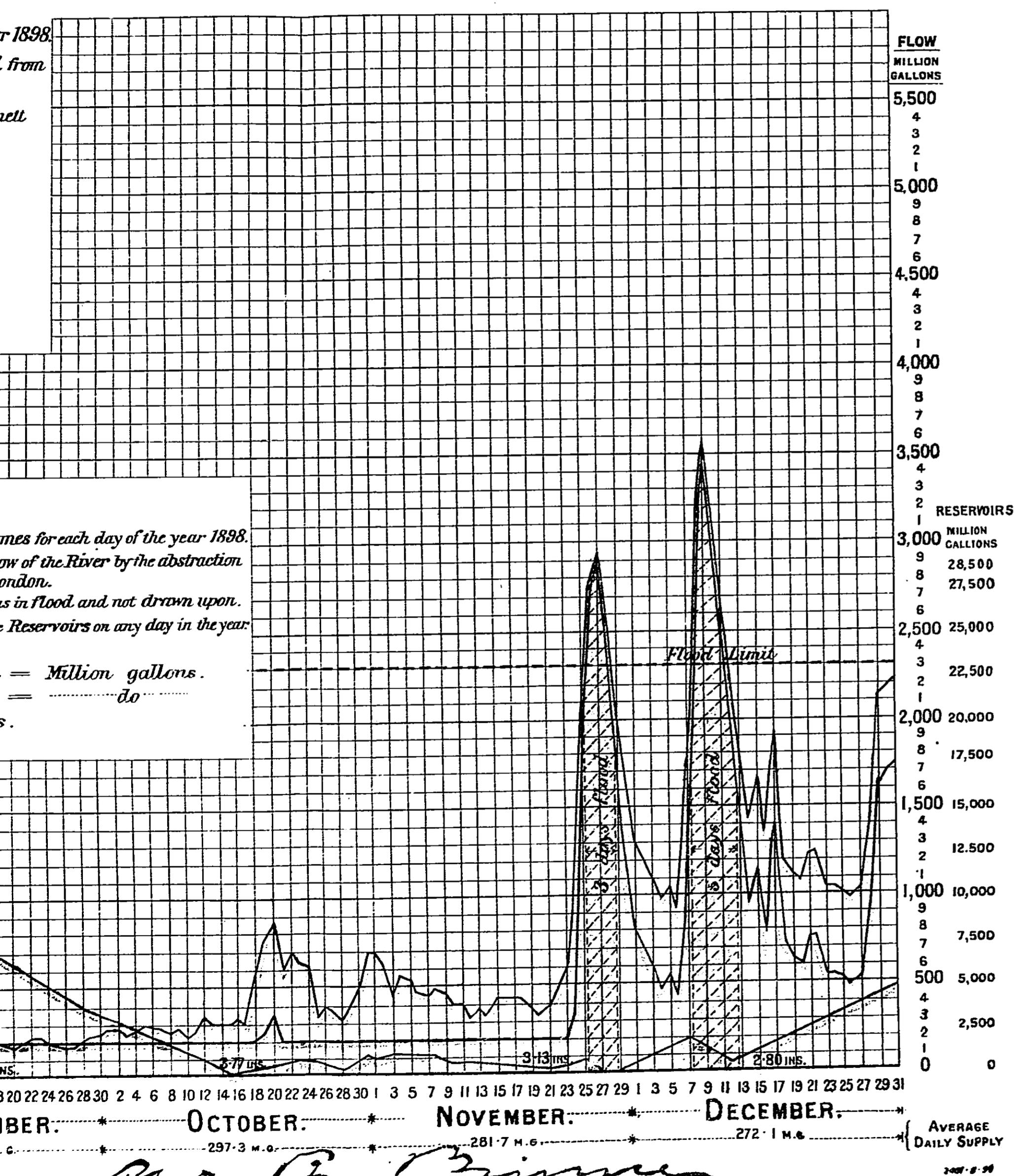
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John R. Brinner

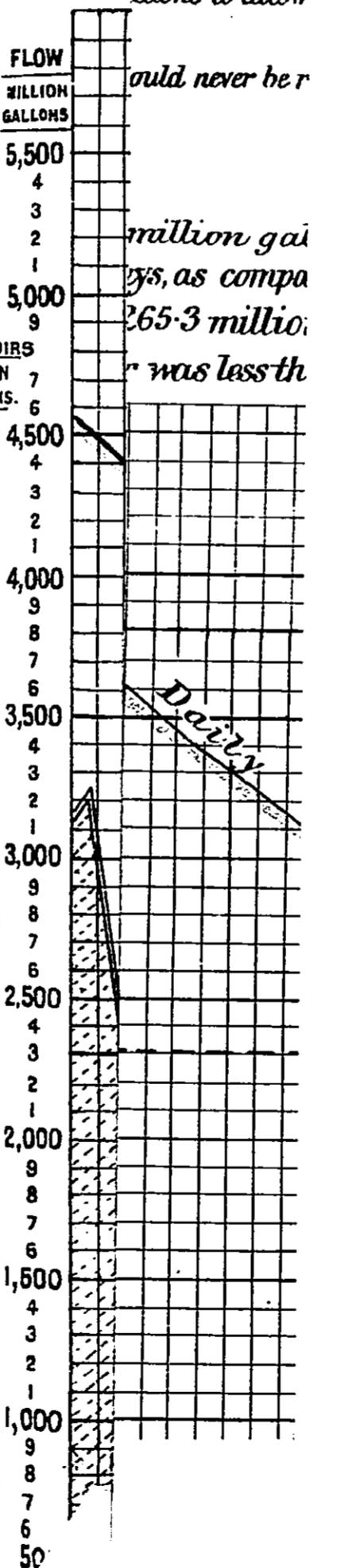
DIAGRAM 13

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- (1) That the flow of the River as shewn in Red
- (2) That the draught on the River will average the Thames by the Companies in the years 1
- (3) That the constructional capacity of the R working capacity of 46,000 million gallor
- (4) That the Reservoirs were full at the commun

That the Reservoirs with some
That on the 28th November
That the flow over Teddington
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There were 99 days in the

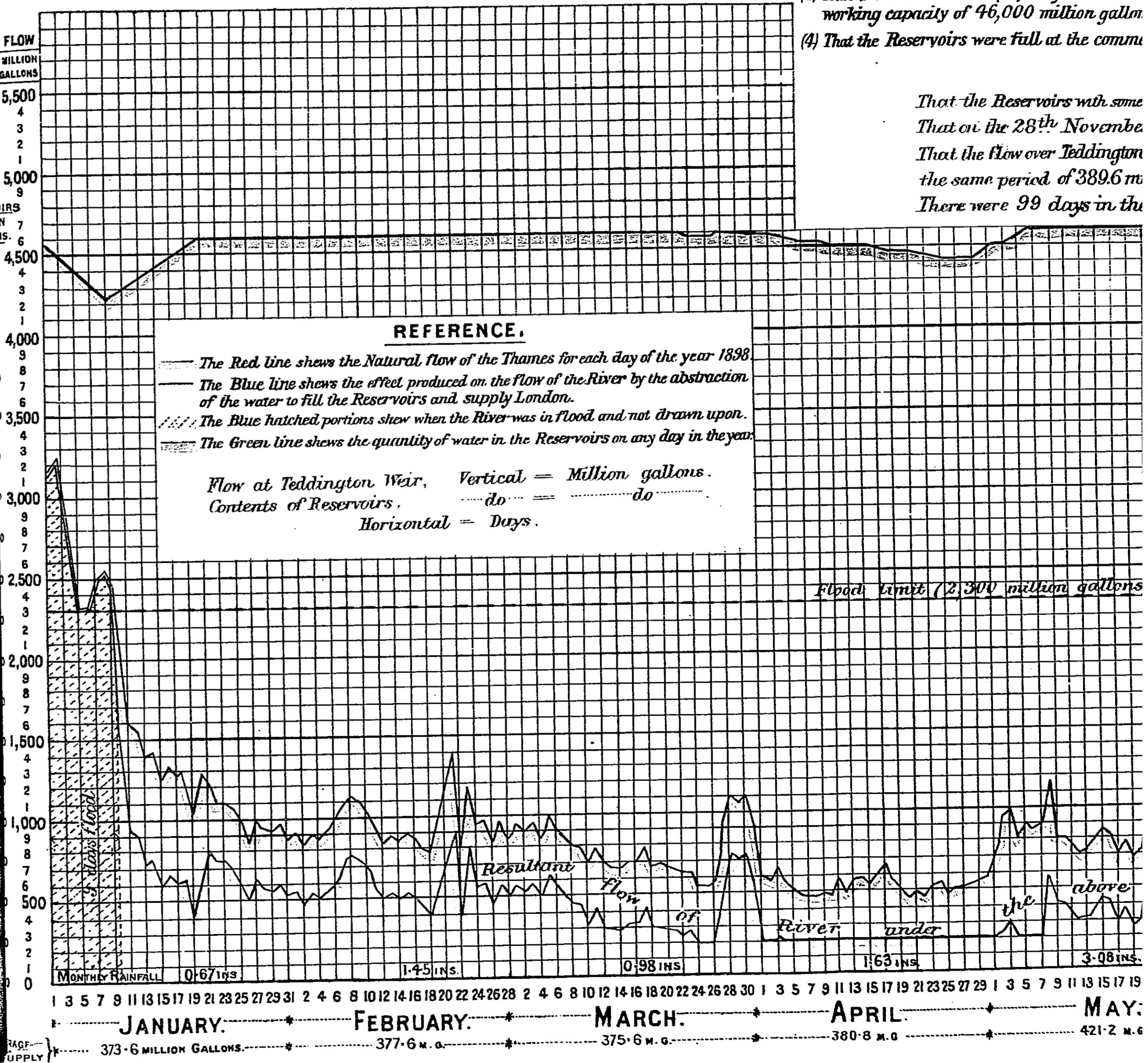


DIAGRAM 13.

(Sir Alexander Binnie's Diagram G.)

Diagram shewing the working of the Staines Reservoir Scheme in such a year as 1898, supplying 400 million gallons, with a minimum flow of 200 million gallons over Teddington Weir.

(Handed in by Sir Alexander Binnie on the 47th Day. See Question 23, 163.)

IT IS ASSUMED.

that the flow of the River as shown in Red was the Natural Flow over Teddington Weir as it would have been if no water had been taken out by the Water Companies in the year 1898.

at the draught on the River will average 400 million gallons a day, but will be drawn in the different months of the year in the mean proportions which were abstracted from the Thames by the Companies in the years 1896-1897. (See Table No. 35 p. 1392 of Notes, and bottom of this diagram.)

at the constructional capacity of the Reservoirs will be 55,600 million gallons, less 9,600 million gallons to allow for cleansing bottom impurity, and evaporation, or a netting capacity of 46,000 million gallons.

at the Reservoirs were full at the commencement of the year and that the flow over Teddington Weir should never be reduced below 200 million gallons a day.

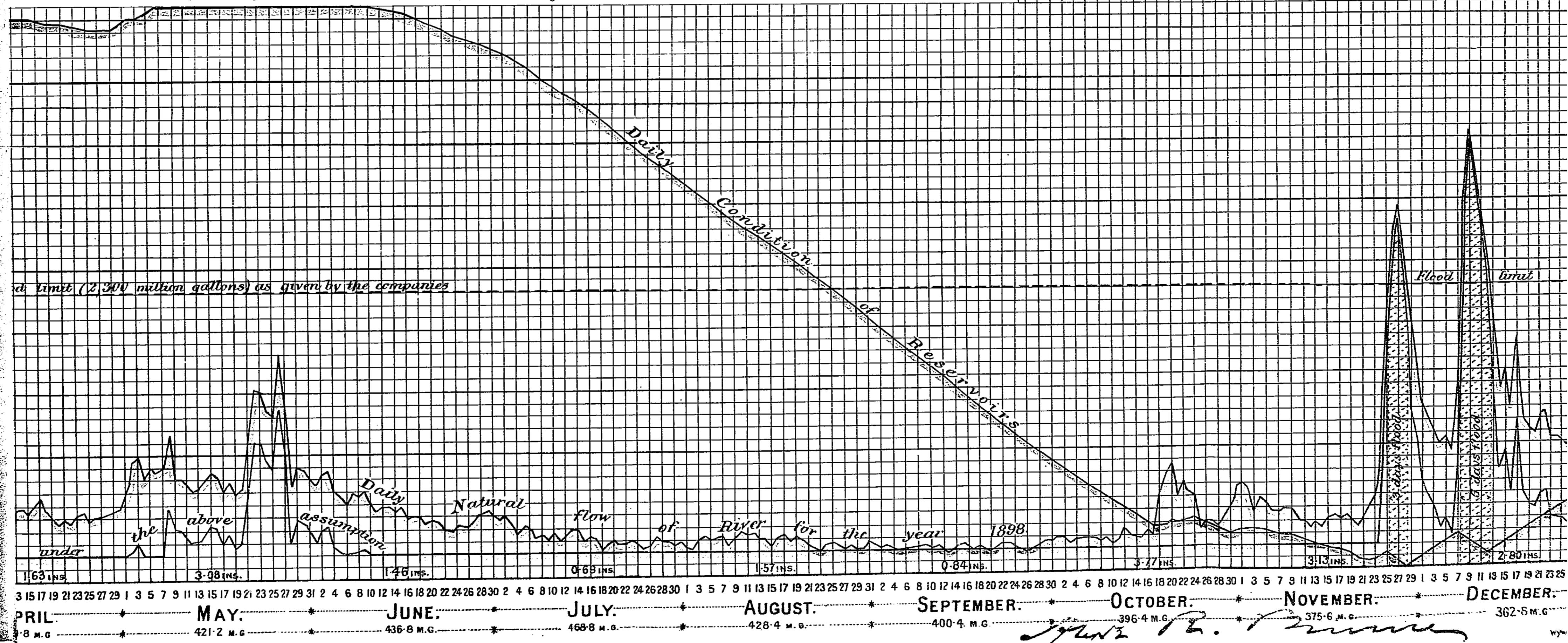
RESULTS.

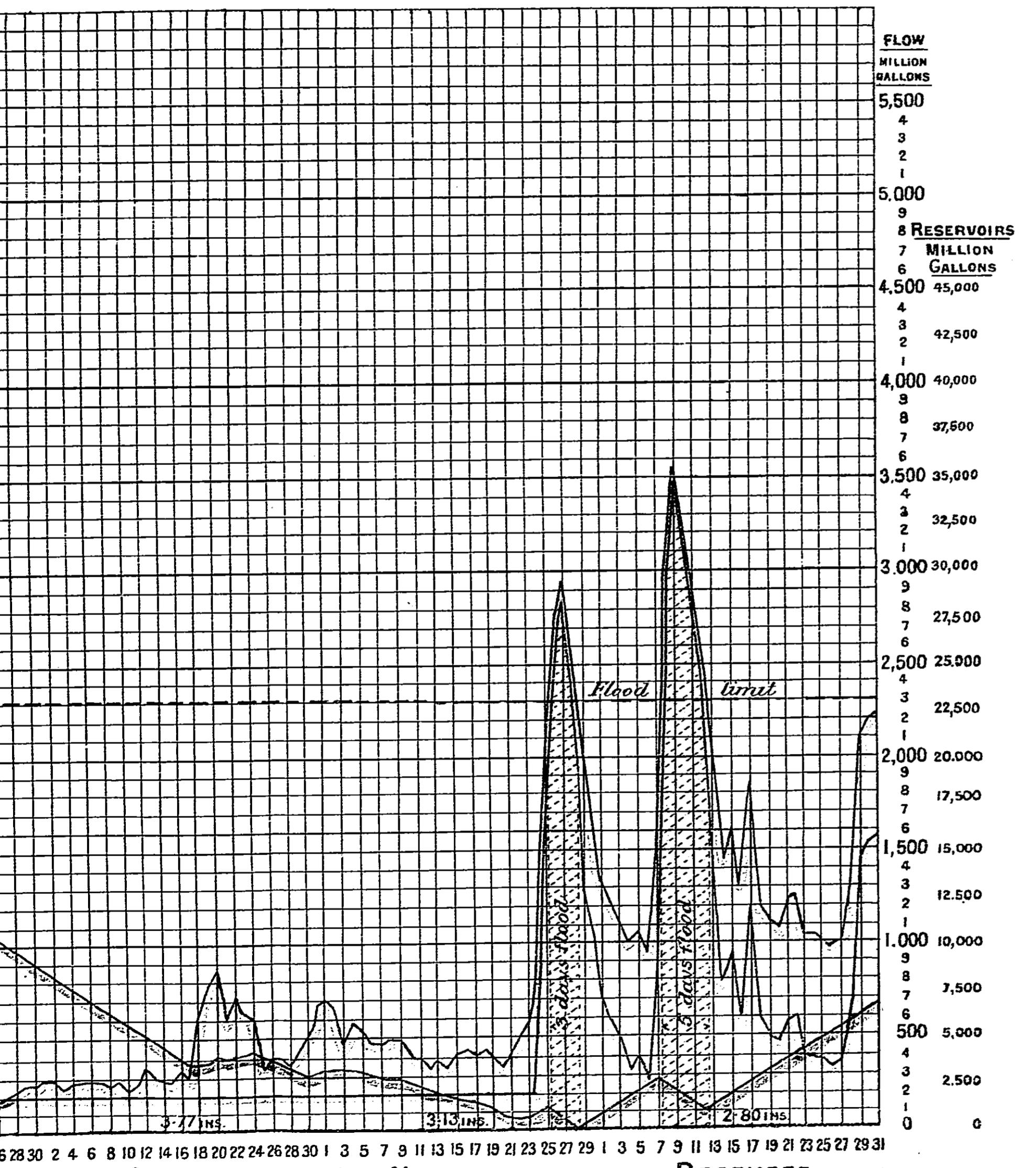
That the Reservoirs with some fluctuation remain full up to the 9th June.

That on the 28th November the water in the Reservoirs was reduced to 156.0 million gallons.

That the flow over Teddington Weir was reduced to 200 million gallons a day for 206 days, as compared with an average natural flow during the same period of 389.6 million gallons a day, and an actual average flow of 265.3 million gallons a day, during the year 1898.

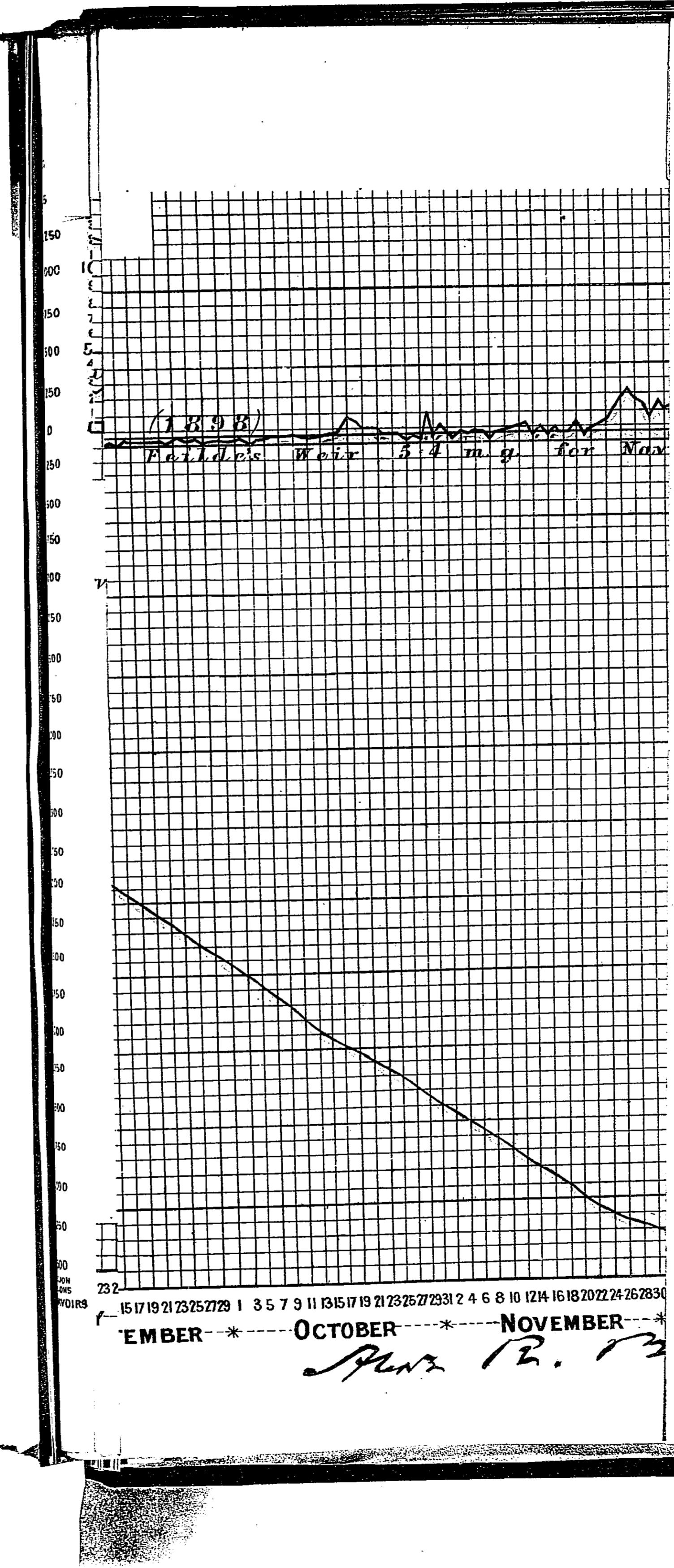
There were 99 days in the year 1898 when the actual flow over Teddington Weir was less than 200 million gallons a day.

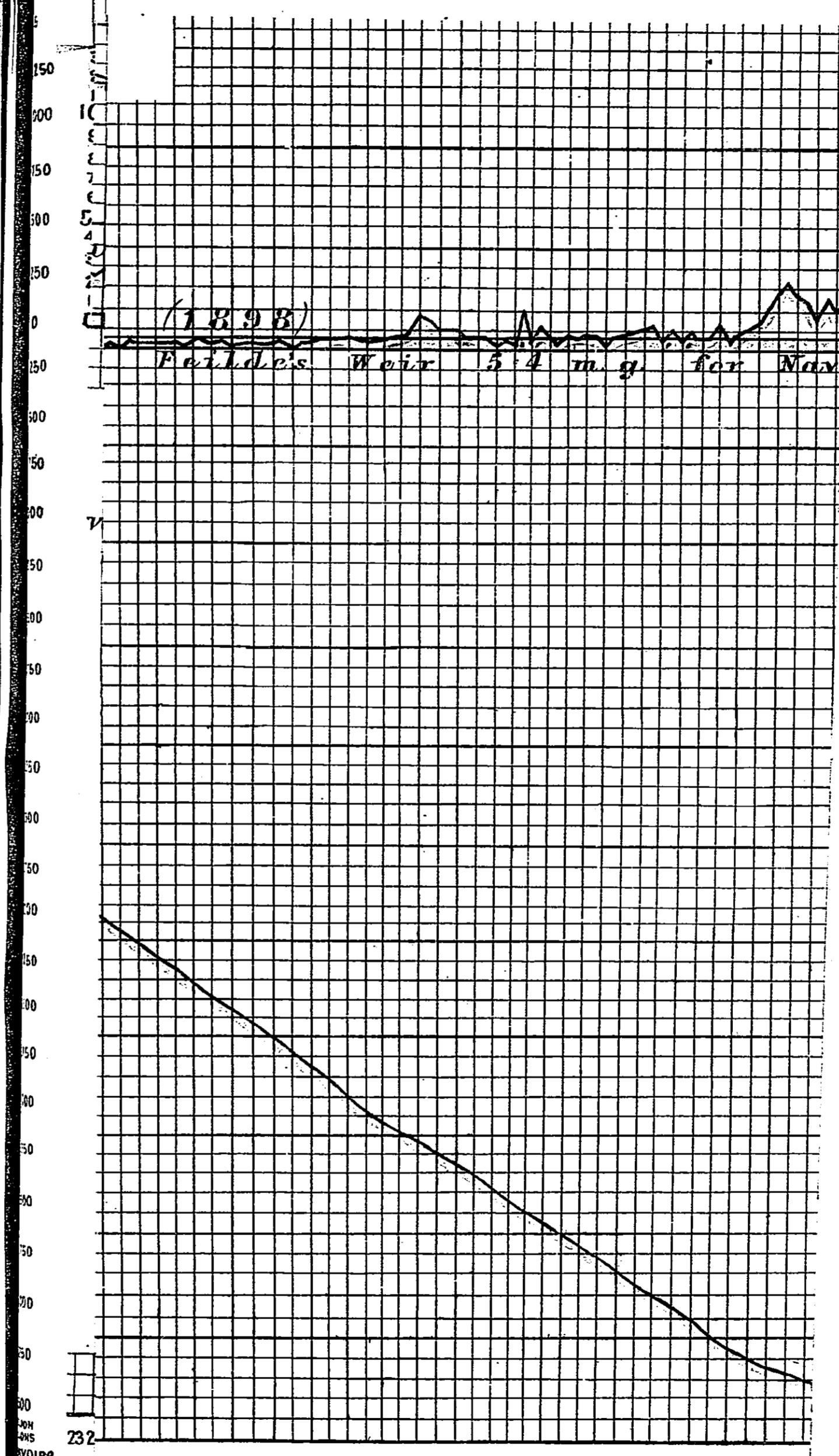




OCTOBER * NOVEMBER * DECEMBER *
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John R. Farmer

Wynne & Sons Ltd. Lith. J.A.S. 8.39

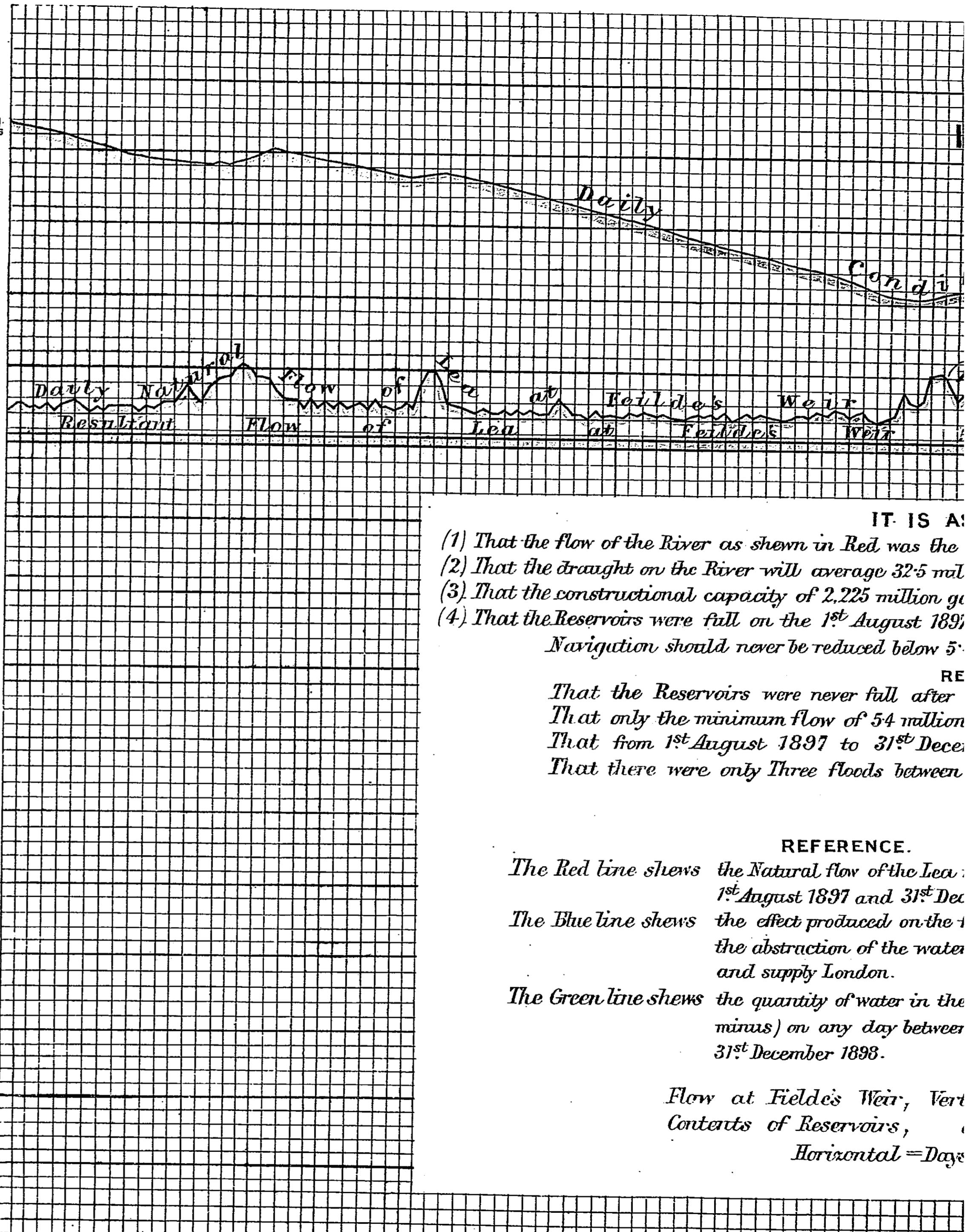




15 17 19 21 23 25 27 29 | 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30

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Platz R. M.



(1) That the flow of the River as shewn in Red was the
 (2) That the draught on the River will average 32.5 mil
 (3) That the constructional capacity of 2,225 million gal
 (4) That the Reservoirs were full on the 1st August 1891

Navigation should never be reduced below 5.

RE

That the Reservoirs were never full after
That only the minimum flow of 54 million
That from 1st August 1897 to 31st Decem-
That there were only Three floods between

REFERENCE.

REFERENCE.
*The Red line shows the Natural flow of the Lea :
1st August 1897 and 31st Dec.*

The Blue line shews the effect produced on the river by the abstraction of the water and supply London.

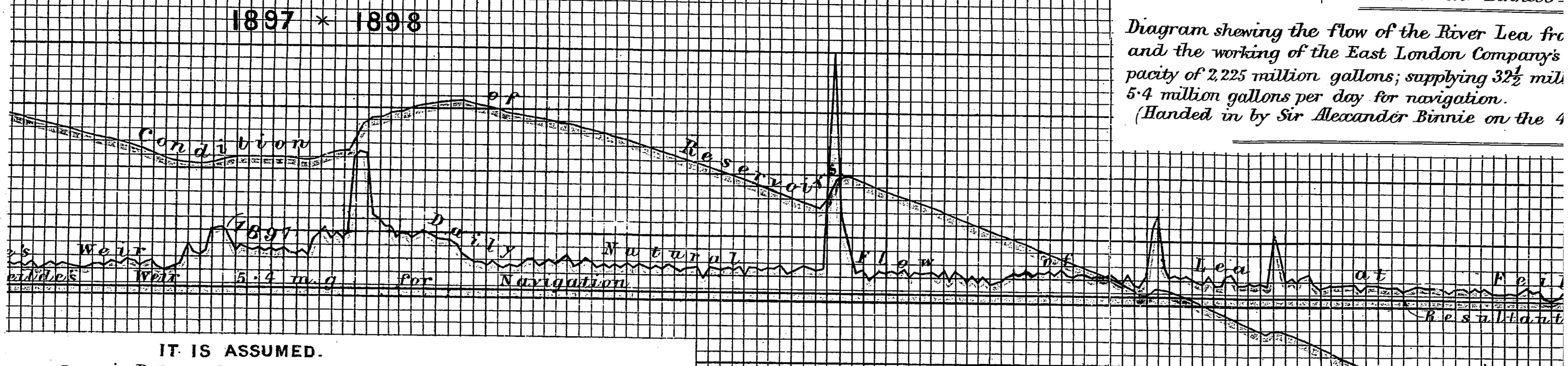
*The Green line shews the quantity of water in the
minus) on any day between
31st December 1898.*

*Flow at Field's Weir, Vert
Contents of Reservoirs,
Horizontal = Days*

DIAGRAM 14.

(Sir Alexander Binnie's)

Diagram shewing the flow of the River Lea from and the working of the East London Company's pumping station at Bow, having a capacity of 2,225 million gallons; supplying 32½ million gallons per day for navigation.
(Handed in by Sir Alexander Binnie on the 4



IT IS ASSUMED.

er as shewn in Red was the Natural Flow over Feilde's Weir.

: River will average 32.5 million gallons a day.

capacity of 2,225 million gallons is the nett working capacity of the Reservoirs. full on the 1st August 1897 and that the minimum Flow over Feilde's Weir would never be reduced below 5·4 million gallons a day.

RESULTS.

The reservoirs were never full after 1st August 1897 and were empty on 30th May 1898. A minimum flow of 54 million gallons a day for Navigation was maintained from 1st August 1897 to 31st December 1898.

re only Three floods between 1st August 1897 and 31st December 1898.

REFERENCE.

- 's the Natural flow of the Lea for each day between 1st August 1897 and 31st December 1898.
 - s the effect produced on the flow of the River by the abstraction of the water to fill the Reservoirs and supply London.
 - ws the quantity of water in the Reservoirs (plus or minus) on any day between 1st August and 31st December 1898.

now at Field's Weir, Vertical = Million gallons.

Contents of Reservoirs, do = do

Horizontal = Days.

9 11 13 15 17 19 21 23 25 27 29 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 1 3 5 7 9 11 13 15 17 19 21 23 25 27 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29
NOVEMBER-----*----- DECEMBER-----*----- JANUARY-----*----- FEBRUARY-----*----- MARCH-----*----- APRIL-----*----- MAY-----*----- JUNE-----*----- JULY-----
1897. 1898.

(Sir Alexander Binnie's Diagram H.)

Diagram shewing the flow of the River Lea from August 1897 to December 1898, and the working of the East London Company's Reservoirs Scheme with a storage capacity of 2,225 million gallons; supplying $32\frac{1}{2}$ million gallons per day; and allowing 5·4 million gallons per day for navigation.

(Handed in by Sir Alexander Binnie on the 47th Day. See Question 23,114.)

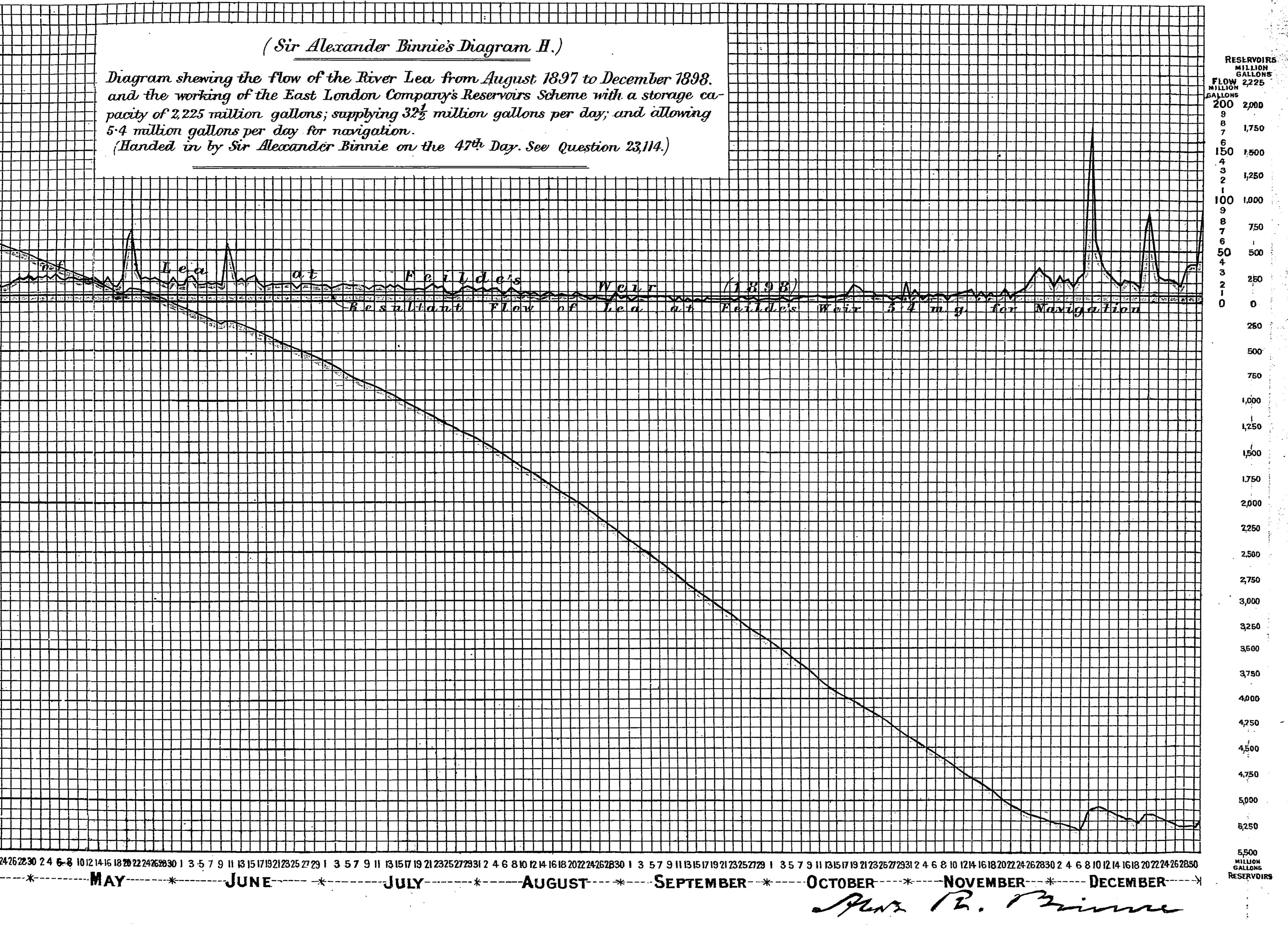


DIAGRAM 15.

(Mr. Middleton's Diagram A.)
Diagram to accompany Mr. Middleton's Table (No. 2, Q. 17,747) showing the daily average supply required (a) for Greater London including outlying portions of Water London, and (b) for Water London, in each year from 1895 to 1948 and 1954.

(Handed in by M.R.E. Middletons on the 38th Day, See Question 18,202.)

The upper dotted line shows the total average daily supply required, from 1890 to 1948 for a population calculated on the figure 5,732,950 given for 1891 in the Report of Lord Ballou's Commission. The lower dotted line shows the supply required from R. Thames.

The upper full line shows the average daily supply required 1900 to 1954 for a population calculated on the figure 5,232,155 given in General Scott's Annual Report for 1891. The lower full line shows the supply required from R. Thames.

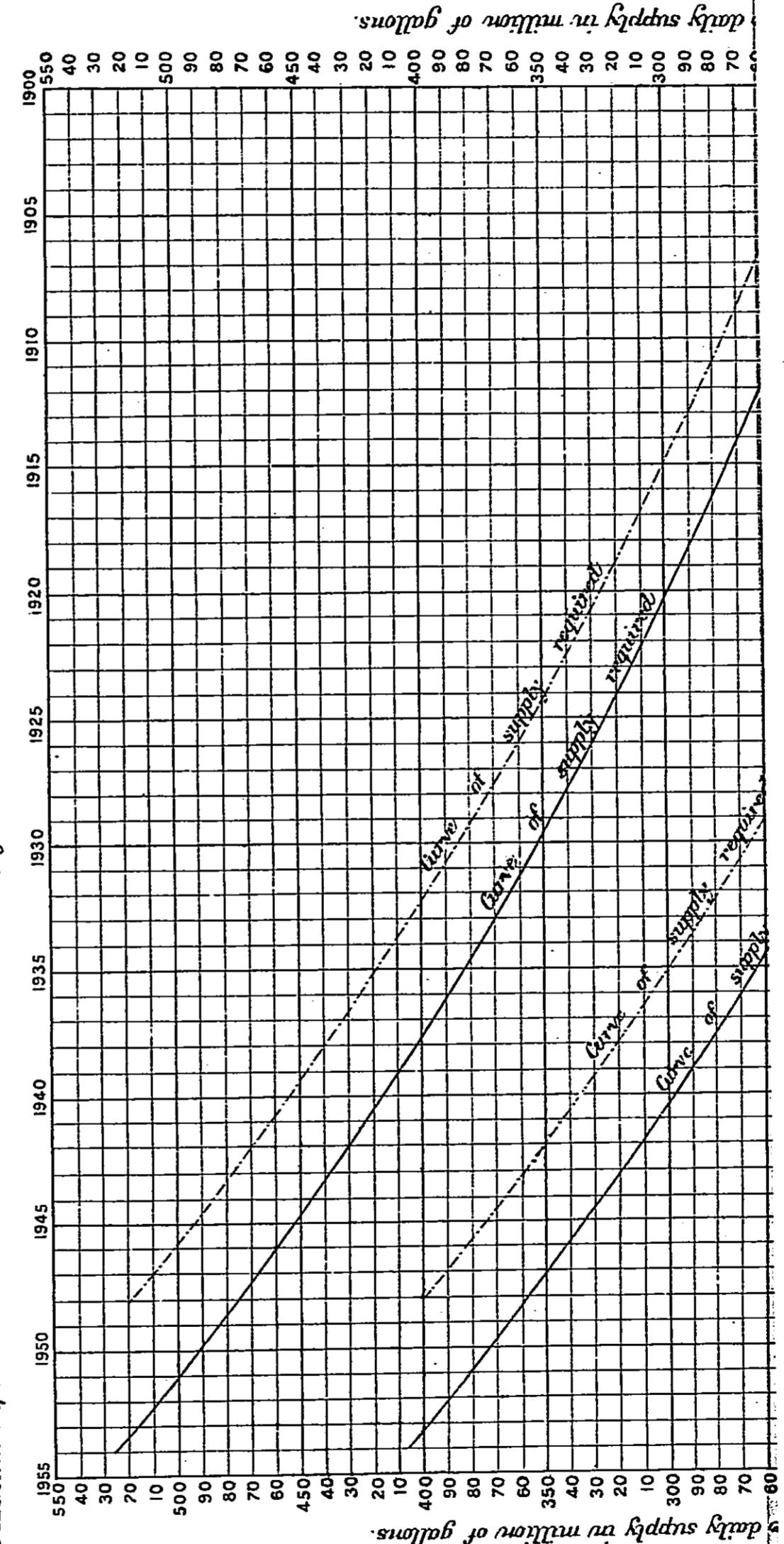


DIAGRAM 15.

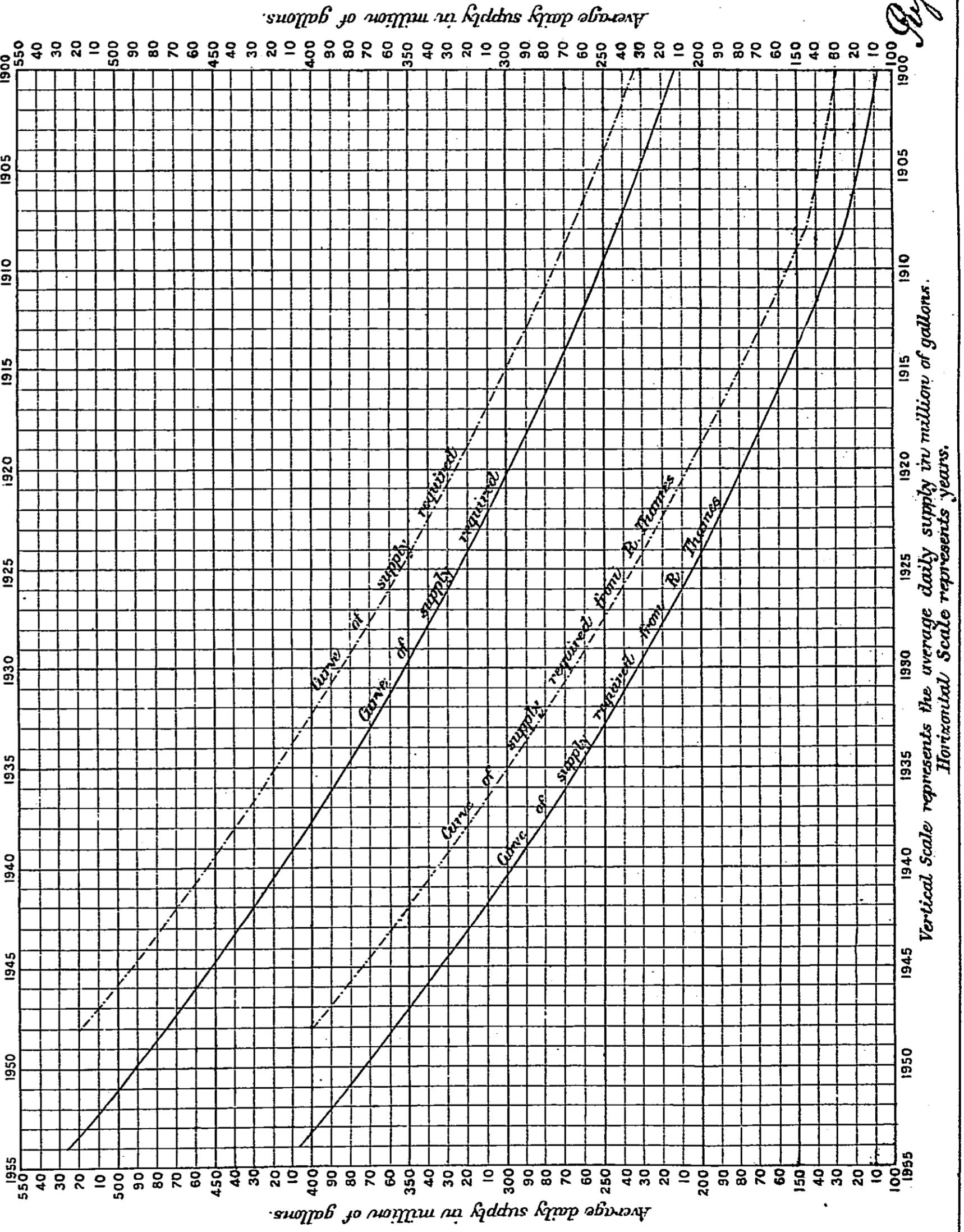
(Mr. Middletons Diagram A.)

Diagram to accompany Mr. Middleton's Table (No. 2, Q. 17.747) showing the daily average supply required (a) for Greater London including outlying portions of Water London, and (b) for Water London, in each year from 1895 to 1948 and 1954.

(Handed in by M.R.E. Middleton, on the 38th Day, See Question 18.202)

The upper dotted line shows the total average daily supply required from 1900 to 1948 for a population calculated on the figure 5.732.950 given for 1891 in the Report of Lord Balfour's Commission. The lower dotted line shows the supply required from R. Thames.

The upper full line shows the average daily supply required 1900 to 1954 for a population calculated on the figure 5.232.155 given in General Scott's Annual Report for 1891. The lower full line shows the supply required from R. Thames.



Vertical Scale represents the average daily supply in million of gallons.
Horizontal Scale represents years.

Horizontal Scale represents years.

Original E. Middleton.

Diagram to accompany Mr. Middleton's Table (App. 3. Q. 14,336) showing the storage required for an average daily supply from the Thames of 130 million gallons increasing to 400 million gallons; The defences calculated on a year similar to that of 1893, no water being drawn from the river when the daily flow over Teddington Weir is 200 million gallons or less.

(Handed in by Mr. R. E. Middleton on the 35th Day. See Question 18,202.)

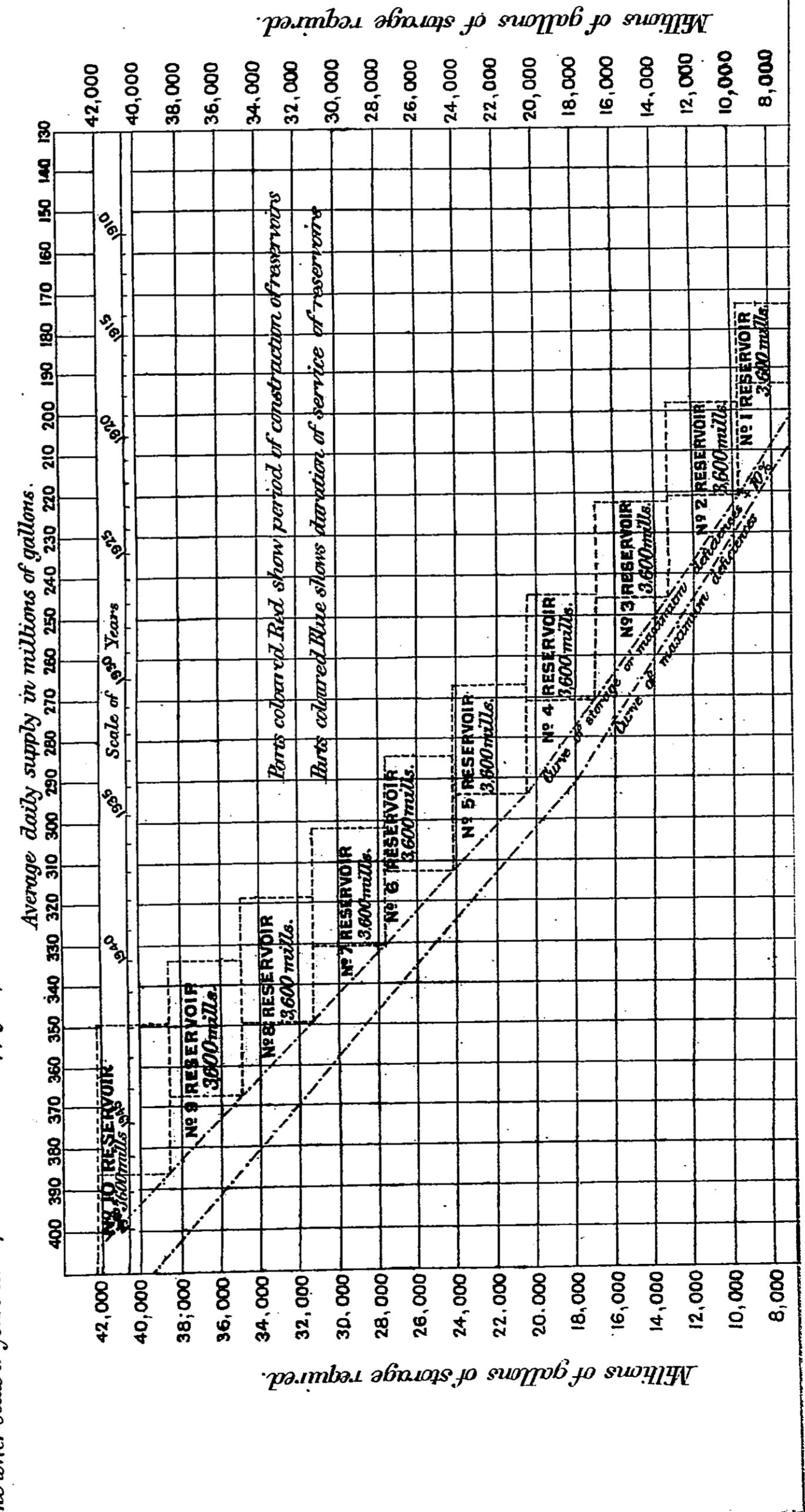
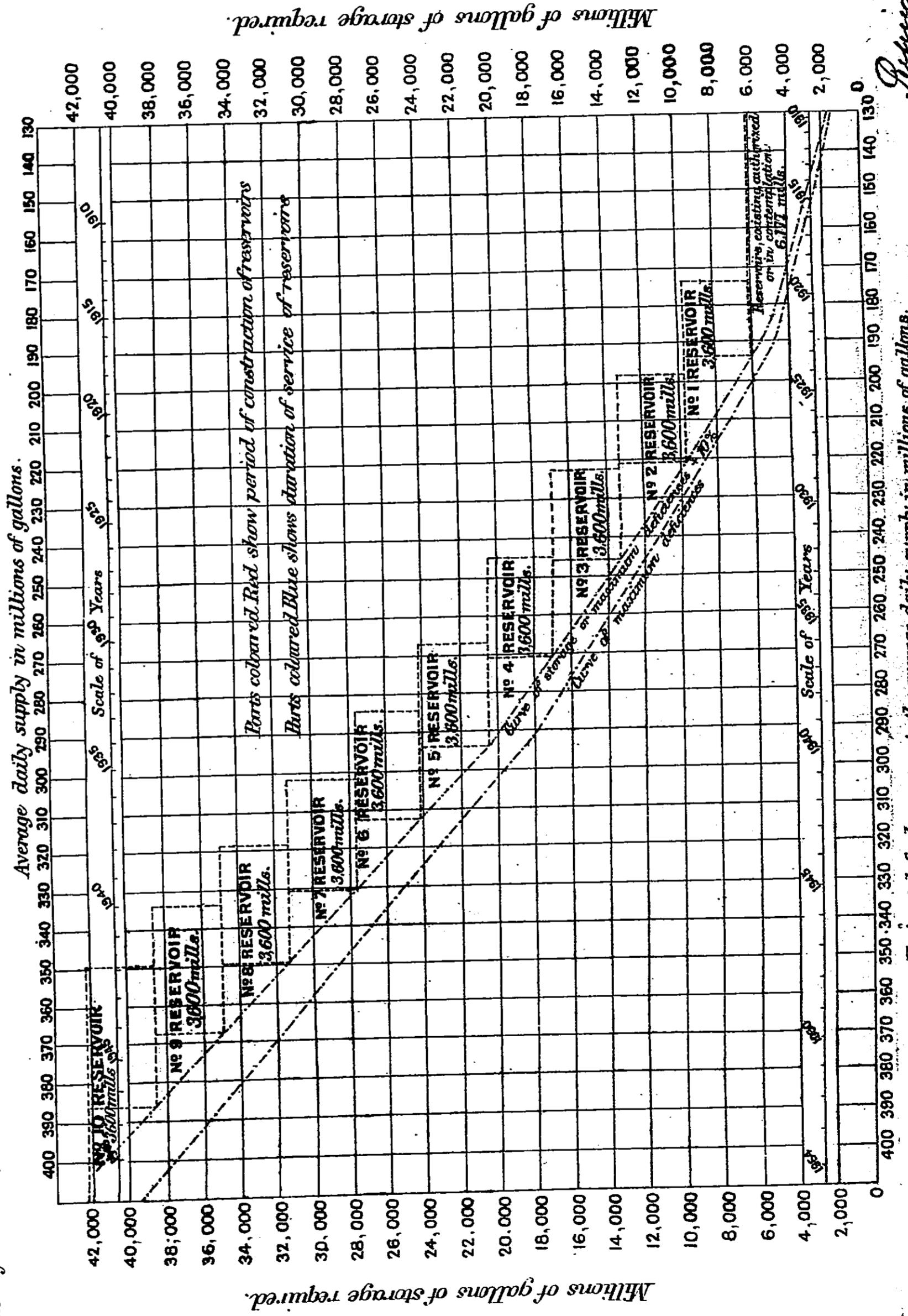


DIAGRAM 16.

Diagram to accompany Mr. Middleton's Table (p. 2) showing the storage required for an average daily supply from the Thames of 150 million gallons increasing to 400 million gallons; The defences calculated on a year similar to that of 1893, no water being drawn from the river when the daily flow over Teddington Weir is 200 million gallons or less.

(Handed in by Mr. E. Middleton on the 3rd Day. See Question 18, 20.)

The upper scale of years corresponds with the supply required for a population calculated on the figure 5,332,950 given for 1891 in the Report of Lord Bulfinch's Commission. The lower scale of years corresponds with the supply required for a population calculated on the figure 5,232,155 as given in General Scott's Annual Report for 1891.



Horizontal Scale represents the average daily supply in millions of gallons.

Vertical Scale represents millions of gallons of storage required during a year similar to that of 1893.

Appended E. Middleton

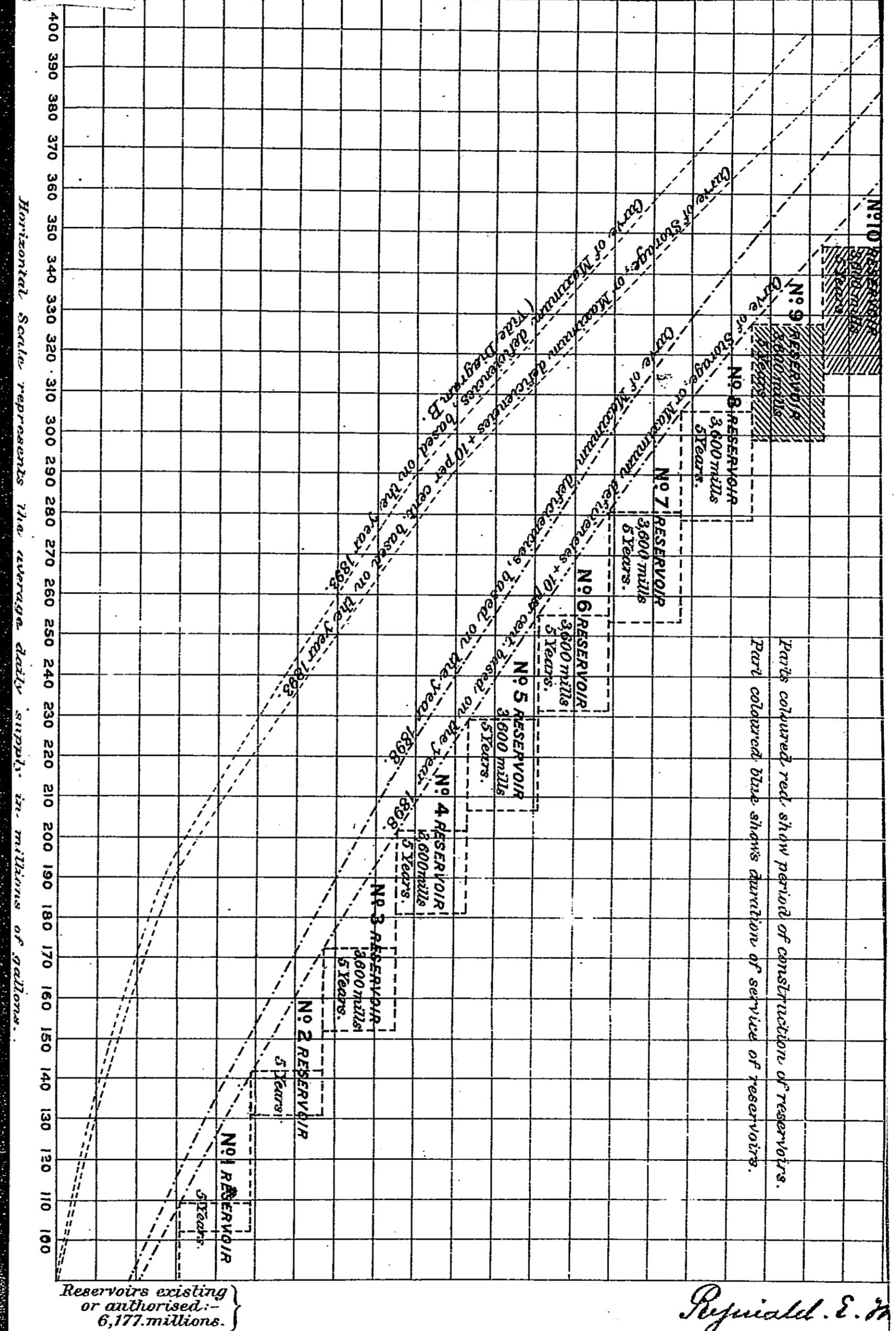


DIAGRAM 17.

DIAGRAM 17.

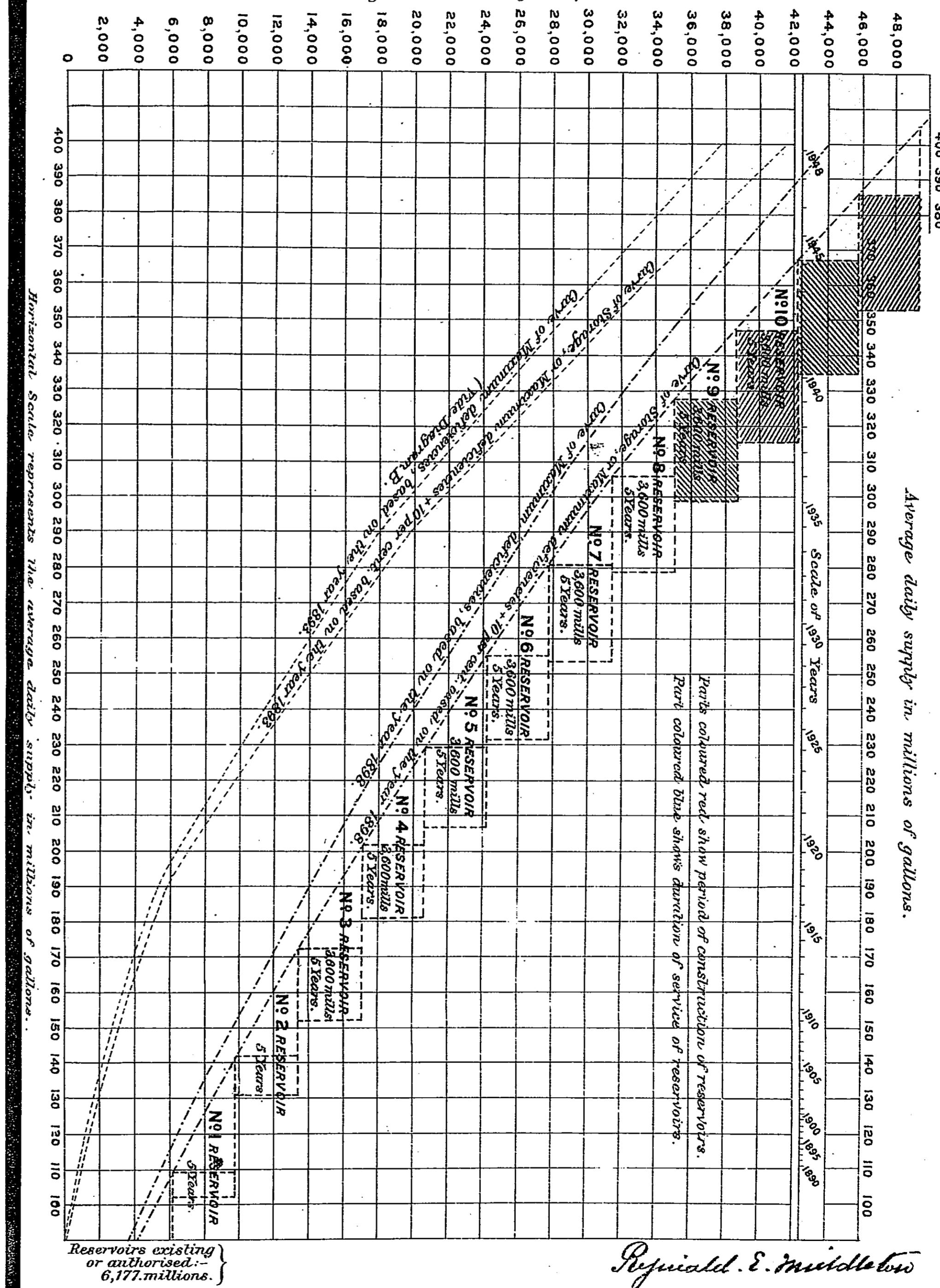
(Mr. Middleton's Diagram C.)

Diagram to accompany Mr. Middleton's Table (No 4. Q. 17.774) shewing the Storage required for an average daily supply from the Thames of 130 million gallons, increasing to 400 million gallons. The deficiencies calculated on a year similar to that of 1898, no water being drawn from the river when the daily flow over Teddington Weir is 200 million gallons or less.

(Handed in by Mr. R. E. Middleton on the 38th Day. See Question 18,444.)

The Scale of Years corresponds with the supply required for a population calculated on the figure 5,732,950 given for 1891 in the Report of Lord Balfoors Commission.

Millions of gallons of storage required.



Reynold E. Middleton

Wyman & Sons, Ltd., Lith. 63, Carter Lane 345, 6.99.

DIAGRAM 18.

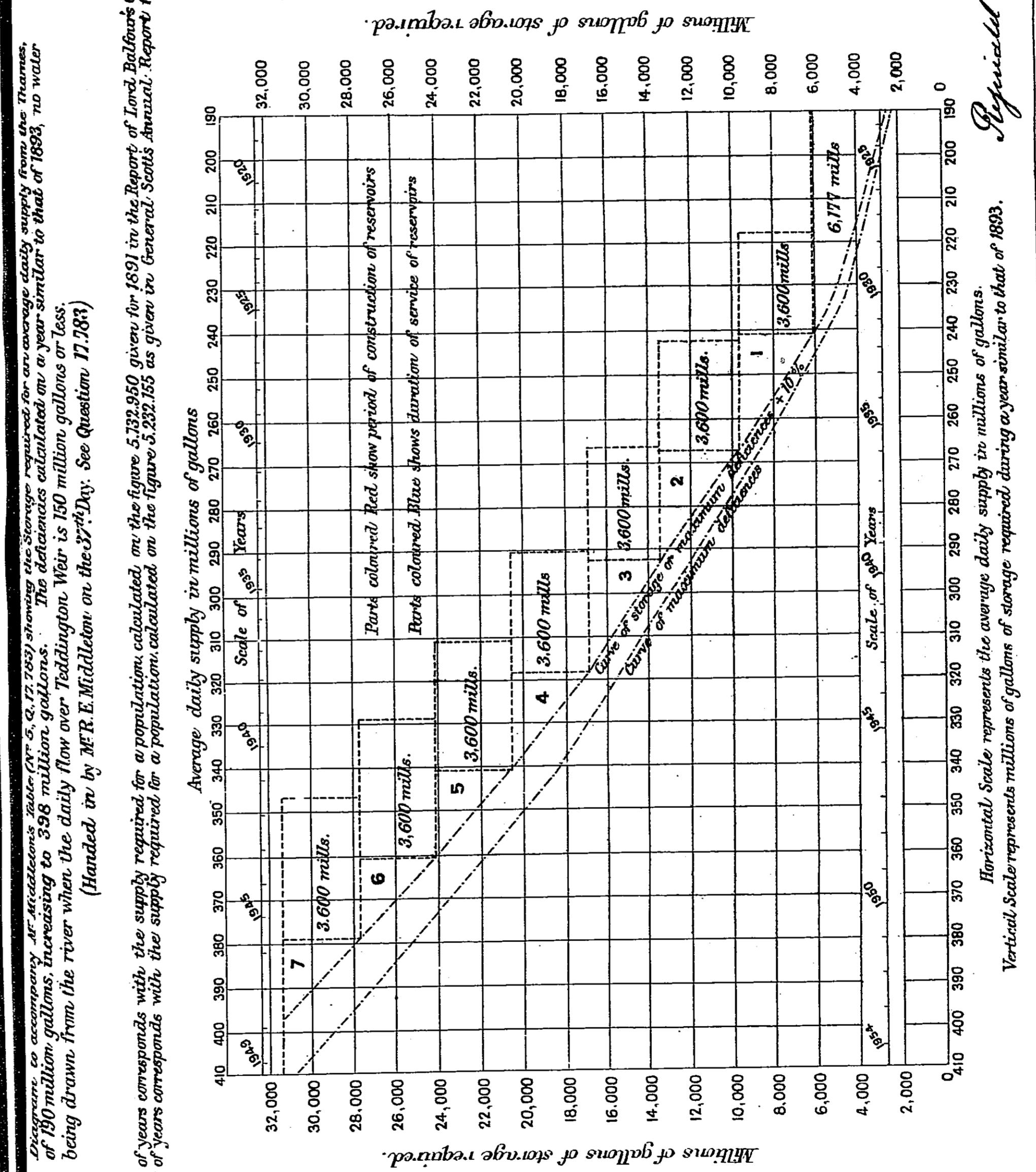
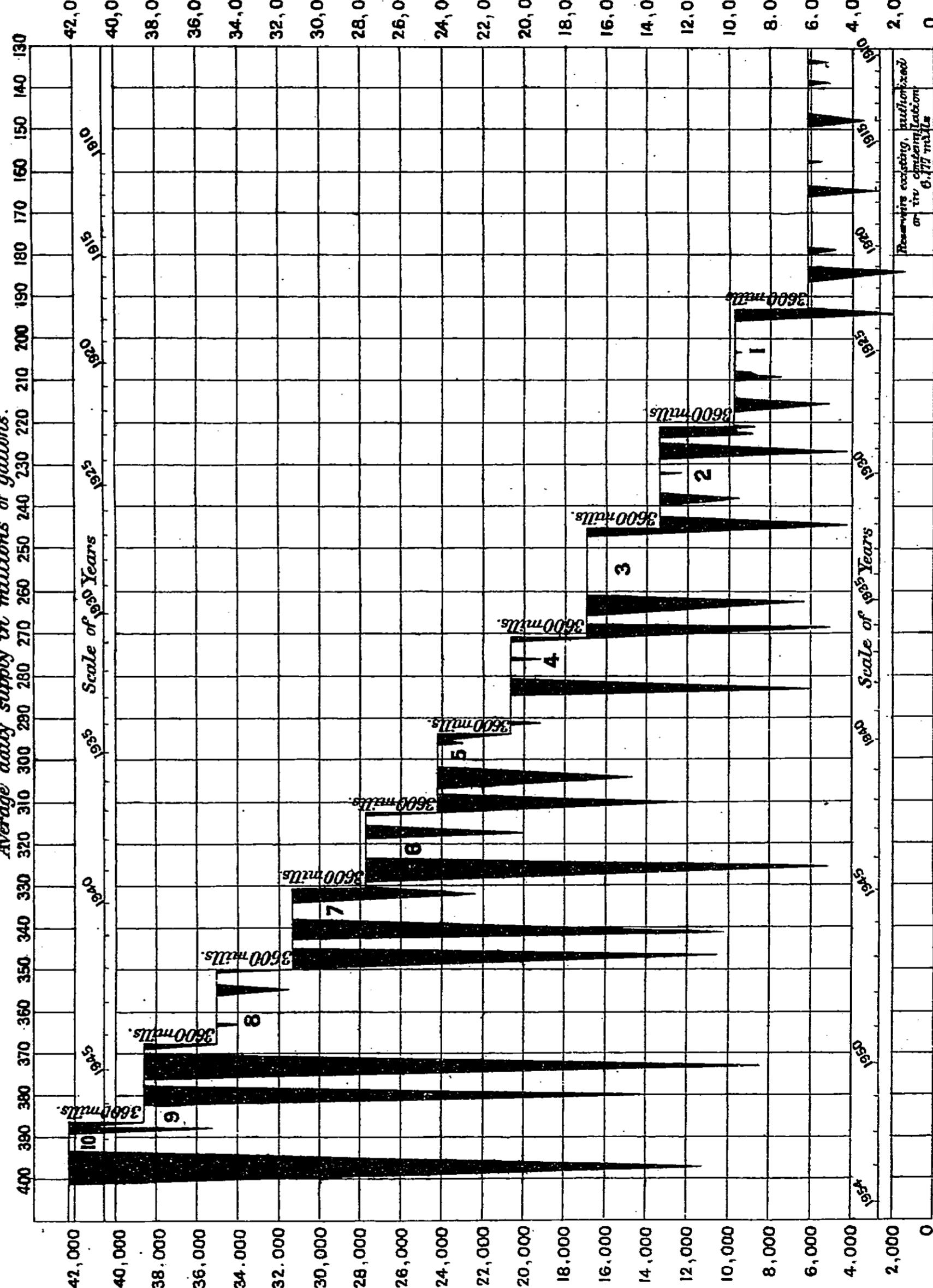


DIAGRAM 10

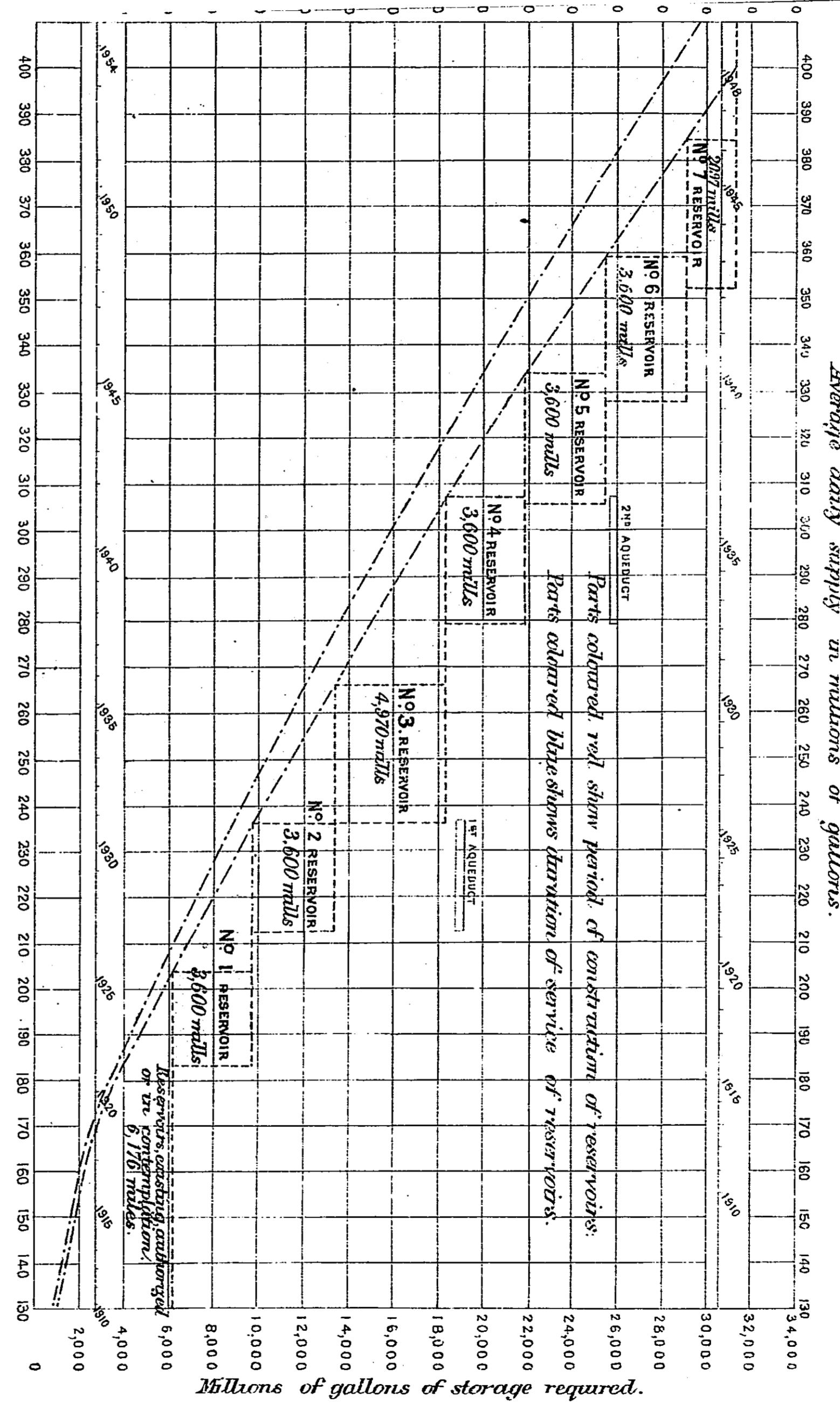
Middleton & Middleton

Diagram to accompany Mr. Middleton's table (No. 7, Q. N. 622) showing the storage required to provide an average daily supply from the Thames, increasing from 119 million gallons in 1895 to 339 million gallons in 1918, no water being drawn from the river when the daily flow over it during the year is 200 Million gallons or less. (Handed in by M.R. E. Middleton on the 37th Day. See Question 17.622.)

Shows (coloured Black) how far the Reservoirs are drawn down each year and the period required for refilling. The upper scale of years corresponds with the supply required for refilling, given for 1891 in the Report of Lord Balcarres' Commission. The lower scale of years corresponds with the supply required for a population calculated on the figure 5,752,350 given for 1891 in General Scott's Annual Report for 1891.



Average daily supply in millions of gallons.



*Horizontal Scale represents the average daily supply in millions of gallons.
Vertical Scale represents millions of gallons of storage required during a year similar to that of 1918, the driest one on record.*

DIAGRAM 2

DIAGRAM 20.

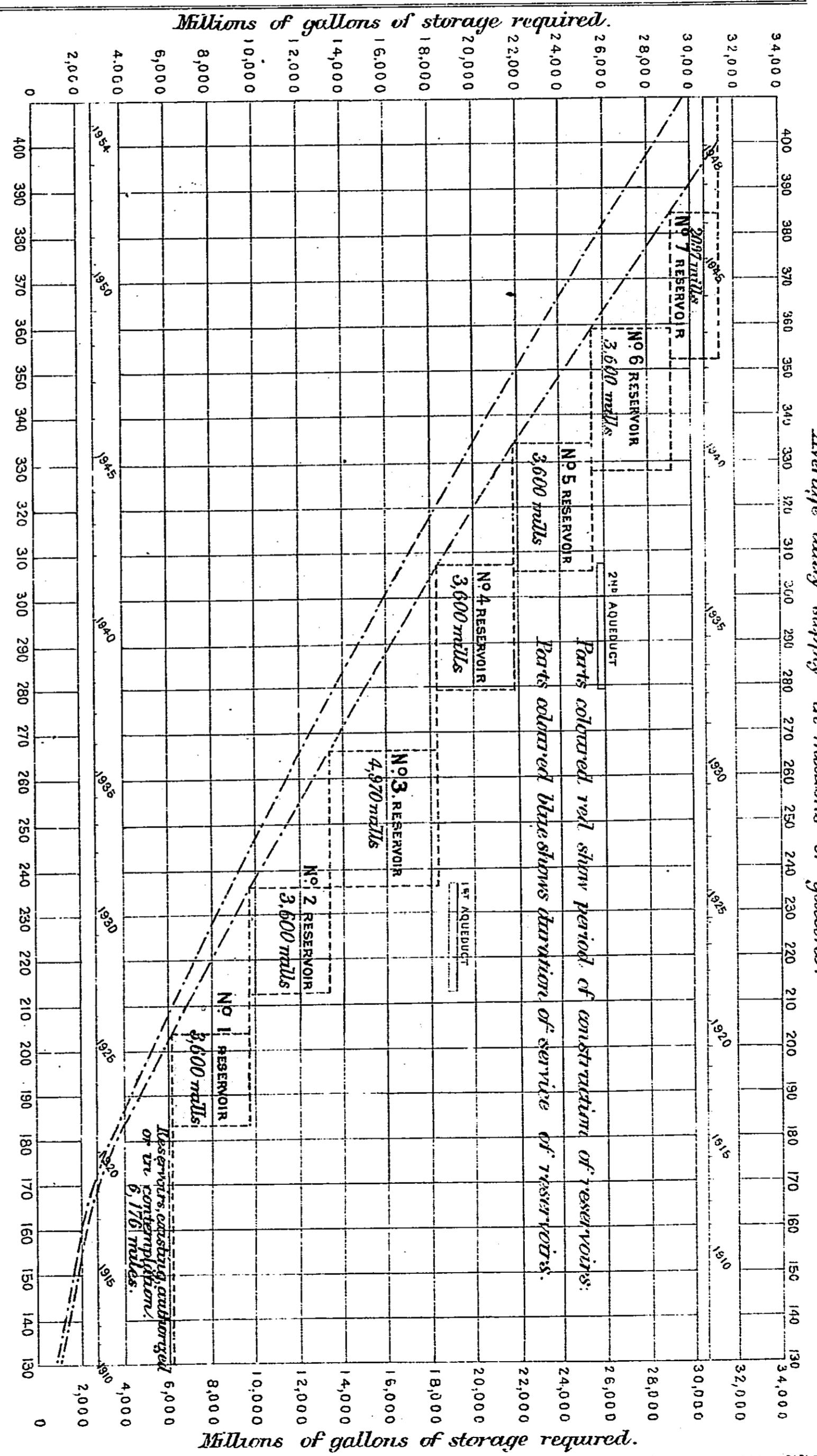
(*M. Hunter's Diagram A.*)

Diagram to accompany M^r. Hunter's Table (No. 1,0, 20,023) showing the Storage required for an average daily supply from the Thames, increasing from 130 million gallons to 400 million gallons, and the maximum annual deficiency from Reservoirs at the various supplies, in a year similar to that of 1898, with a minimum flow of 100 million gallons at Teddington Weir.

Handed in by M^r. W. Hunter on the 40th Day. See Question 20,082.

The upper scale of years corresponds with the supply required for a population calculated on the basis of 5,732,950 given for 1891 in the Report of Lord Balfour's Commission.

Lower Scale of Years corresponds with the supply required for a population calculated on the
av 5,232,155 given for 1891 in General Scott's Annual Report.



Horizontal Scale represents the average daily supply in millions of gallons.

Horizontal Scale represents the average daily supply in millions of gallons.

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DIAGRAM 21.

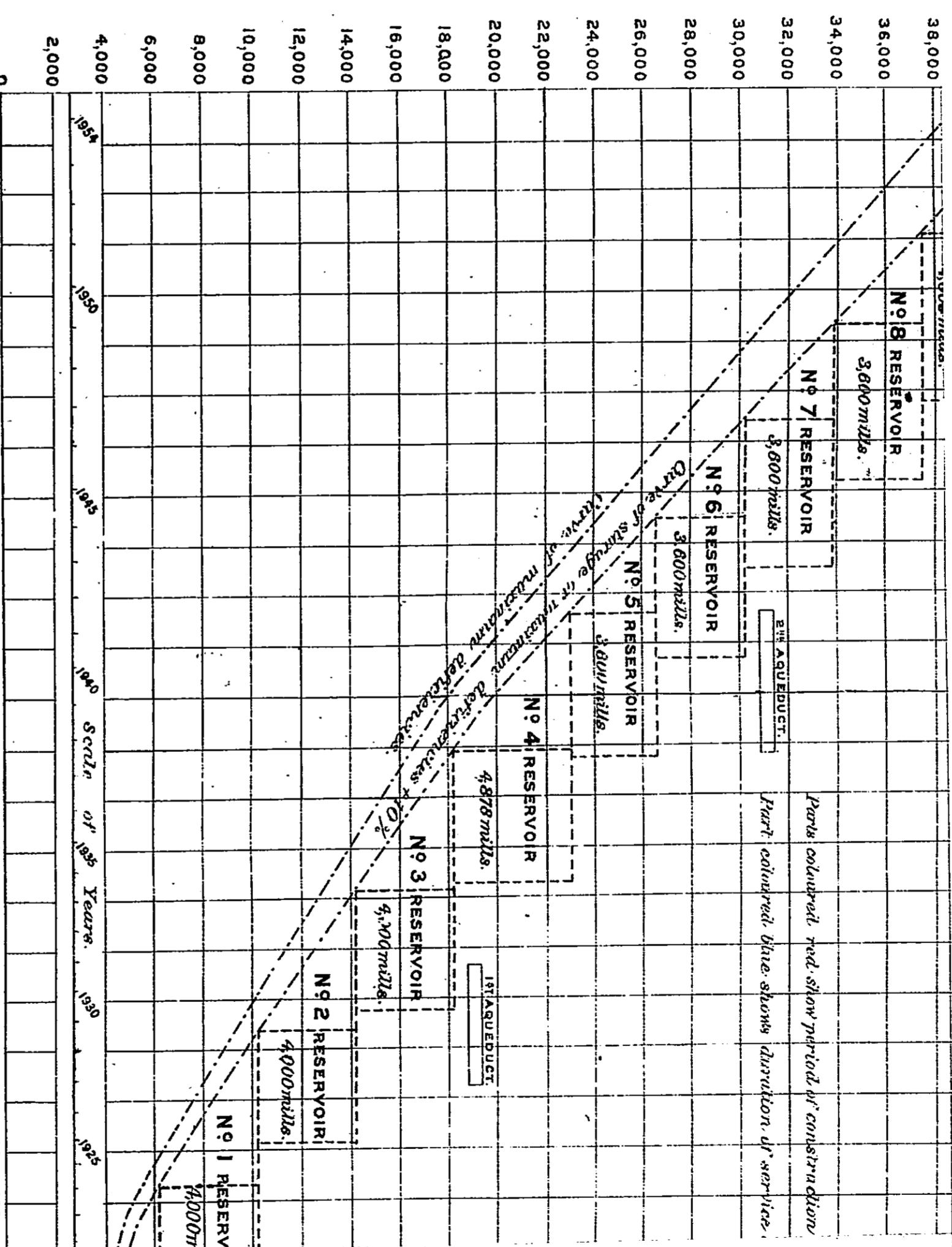
(Mr. Hunter's Diagram B.)

Diagram to accompany Mr. Hunter's Table [No. 20,061] showing the Storage required for an average supply from the Thames increasing from 180 million gallons to 400 million gallons, and the maximum storage from Reservoirs at the various supplies, in a year similar to that of 1893, with a minimum flow of 2,000 gallons at Teddington Weir.

(Handed in by Mr. W. Hunter on the 40th Day. See Question 20,061.)

The upper Scale of years corresponds with the supply required for a population calculated on the figures given for 1891, in the Report of Lord Balfour's Commission.
The lower Scale of years corresponds with the supply required for a population calculated on the figures given for 1891, in General Scott's Annual Report.

Millions of gallons of storage required.



Horizontal Scale represents the average daily supply in millions of gallons.

DIAGRAM 21.

DIAGRAM 21.

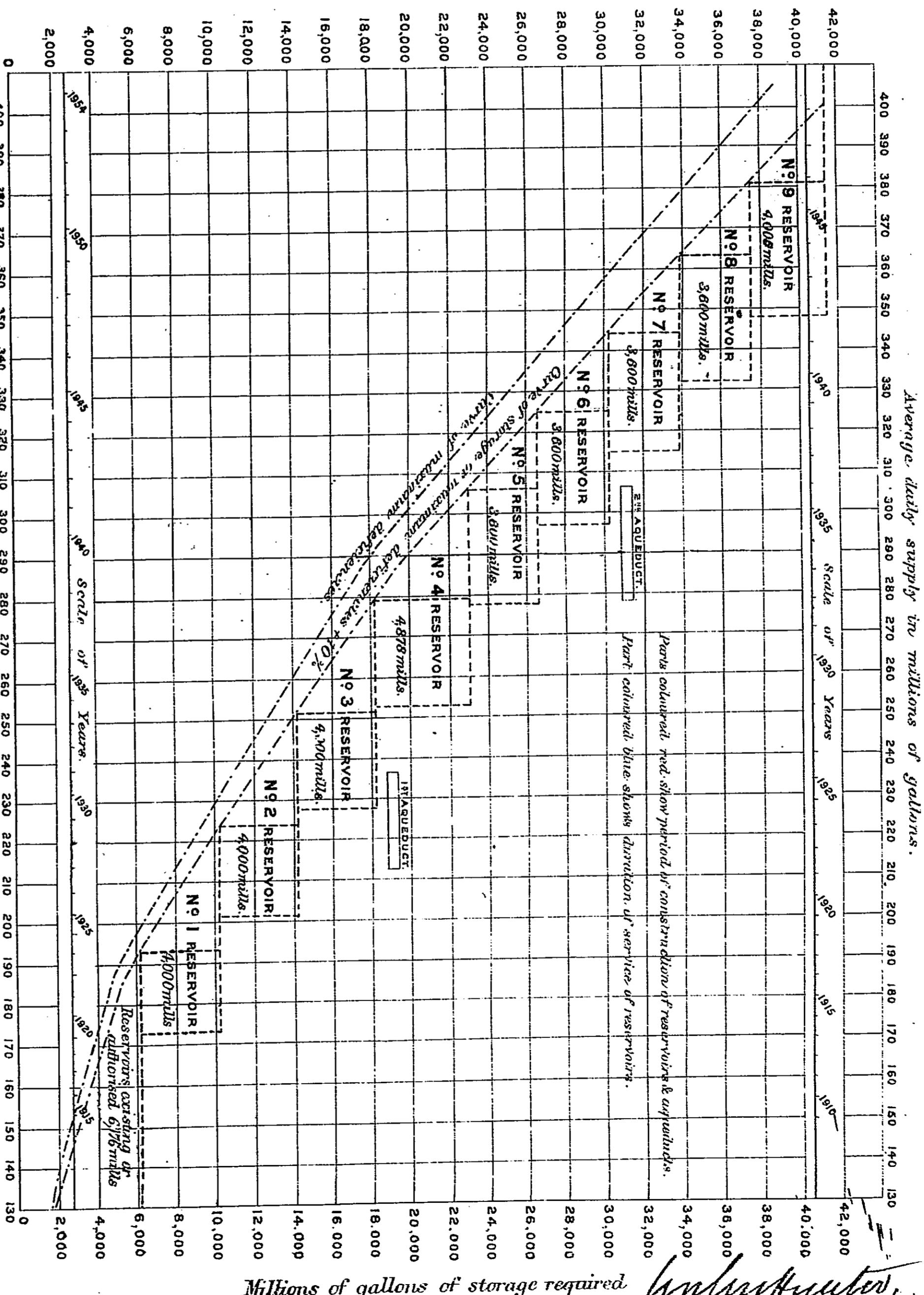
(Mr. Hunter's Diagram B.)

Diagram to accompany Mr. Hunter's Table No. 20, 20,061 showing the Storage required for an average daily supply from the Thames, increasing from 130 million gallons to 400 million gallons, and the maximum annual deficiency from Reservoirs at the various supplies, in a year similar to that of 1893, with a minimum flow of 200 million gallons at Teddington Weir.

(Handed in by Mr. W. Hunter on the 40th Day. See Question 20,061.)

The upper Scale of years corresponds with the supply required for a population calculated on the figure 5,732,950 given for 1891, in the Report of Lord Balfour's Commission.
The lower Scale of years corresponds with the supply required for a population calculated on the figure 5,232,155 given for 1891, in General Scott's Annual Report.

Millions of gallons of storage required.



Horizontal Scale represents the average daily supply in millions of gallons.

Diagram showing the Natural flow of the River Thames at Teddington Weir in the years 1893 and 1898.

(Handed in by Mr Hawley on the 4th day. See Question 20764.)

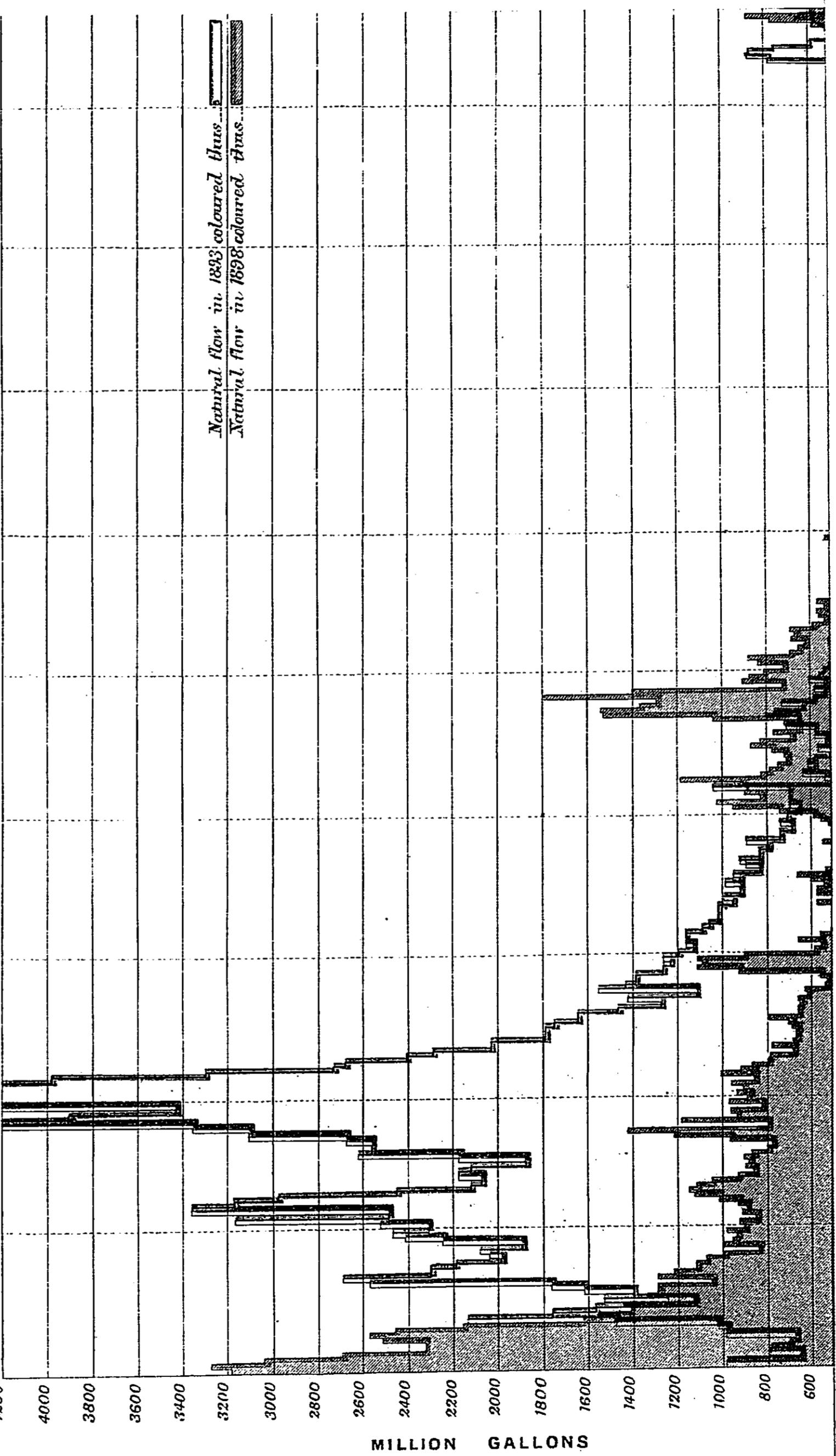


DIAGRAM 22.

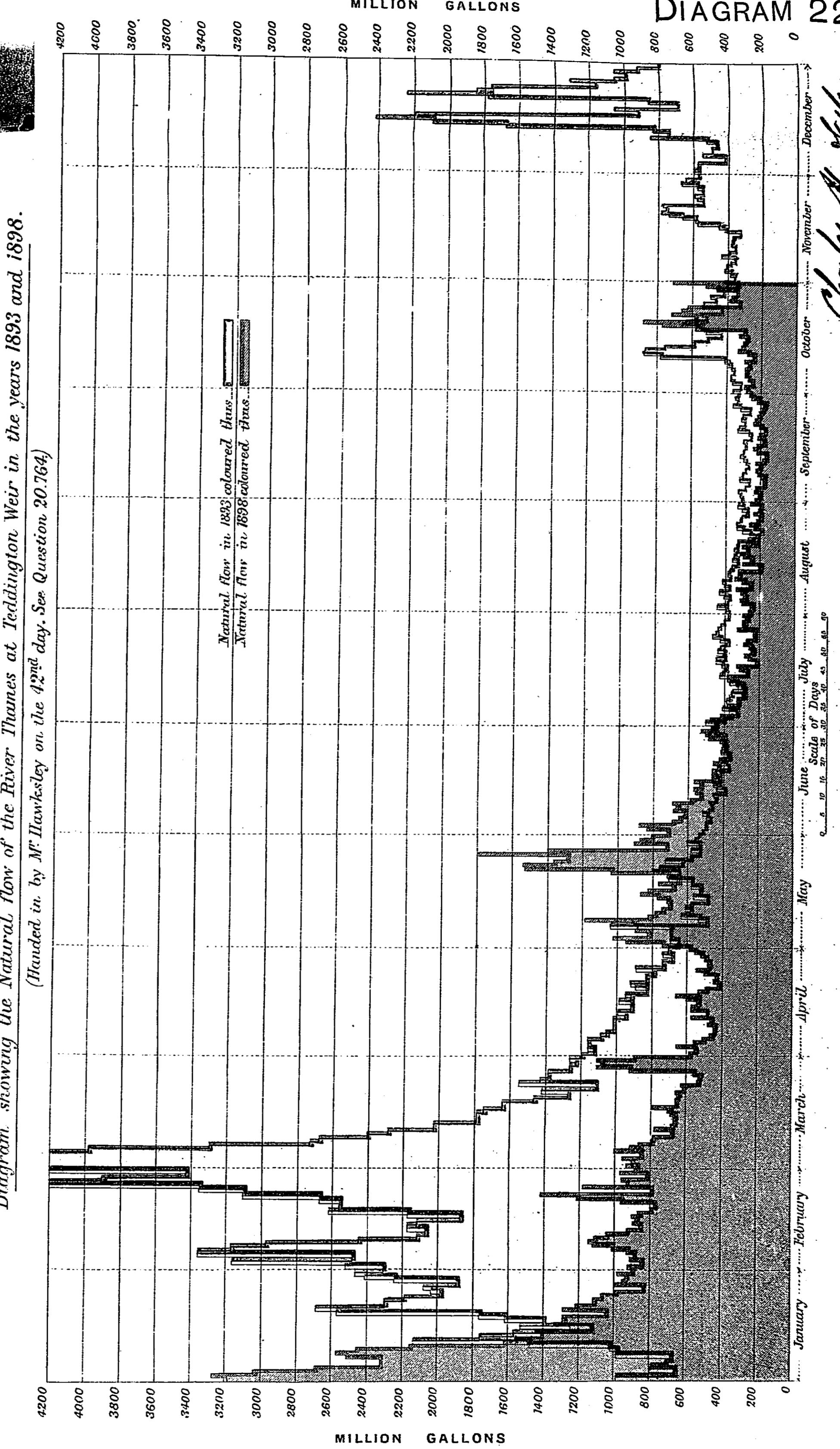
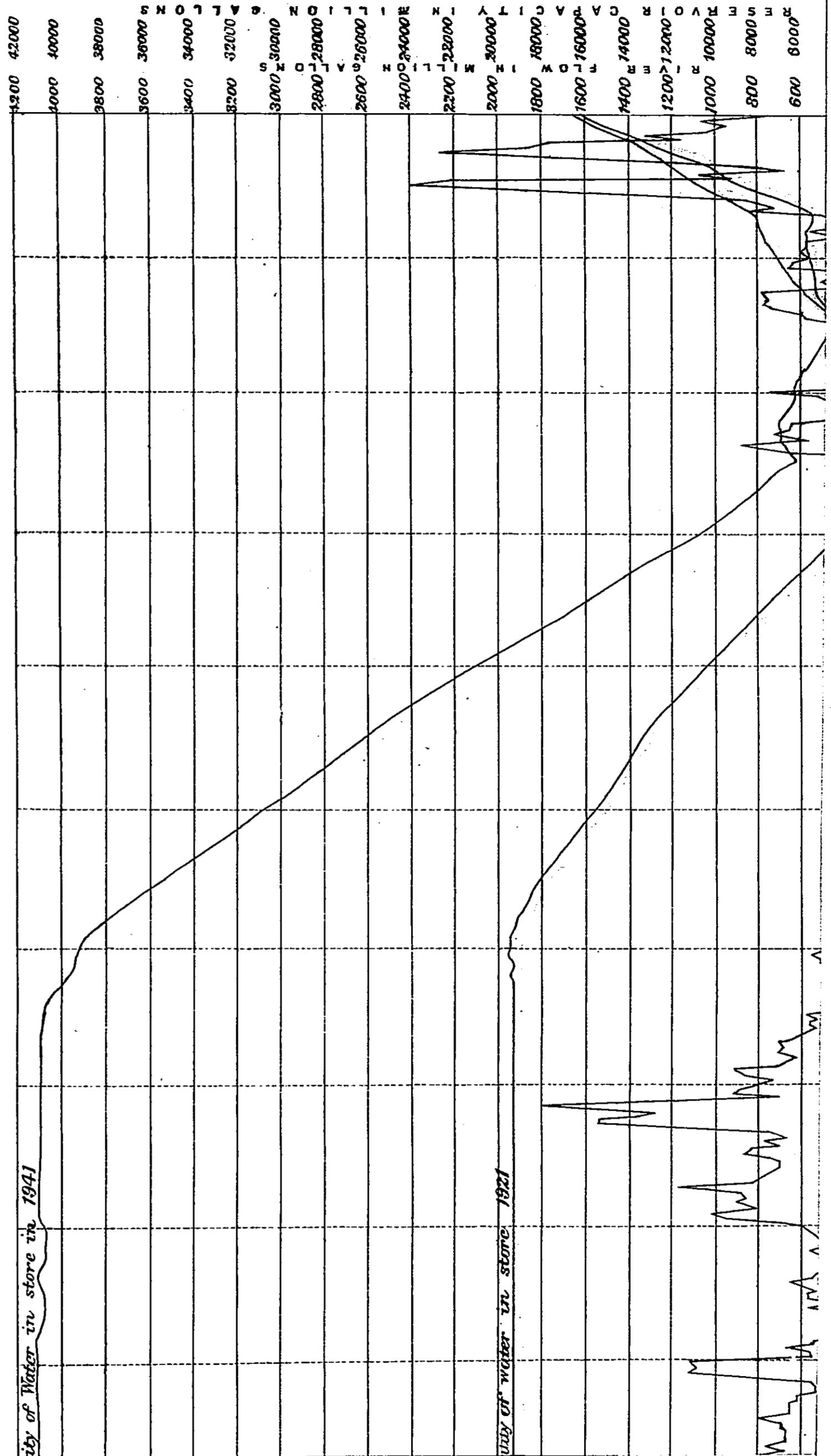


Diagram showing the Thames Valley Storage Reservoirs, the Quantity of Water in store daily in the years 1921 and 1941.

(Handed in by Mr. Hawksley on the 42nd day. See Question 20703.)



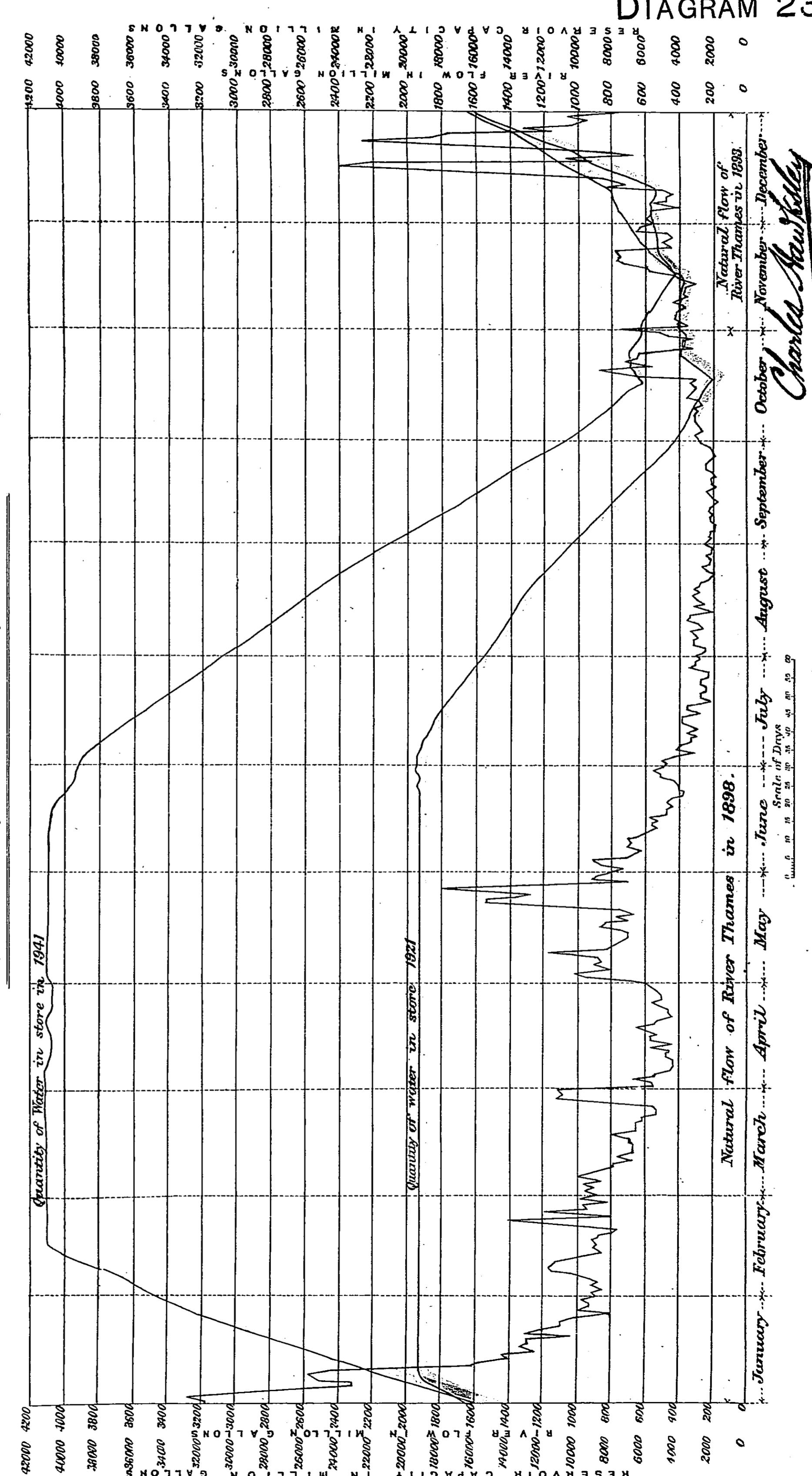


DIAGRAM 23.

Diagram showing for the Thames Valley Storage Reservoirs, the Quantity of Water in store daily in the years 1921 and 1941.
(Handed in by Mr. Hawksley on the 42nd day. See Question 20768.)

DIAGRAM 24.

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(Sir Wm.

D

DIAGRAM SHEWING THE FLOW OF THE RIVER THAMES
WATER DURING FLOOD IN THE CASE OF THE FIVE THA
AVERAGE OF MICROBES

(Handed in by Sir W. G. Crooke)

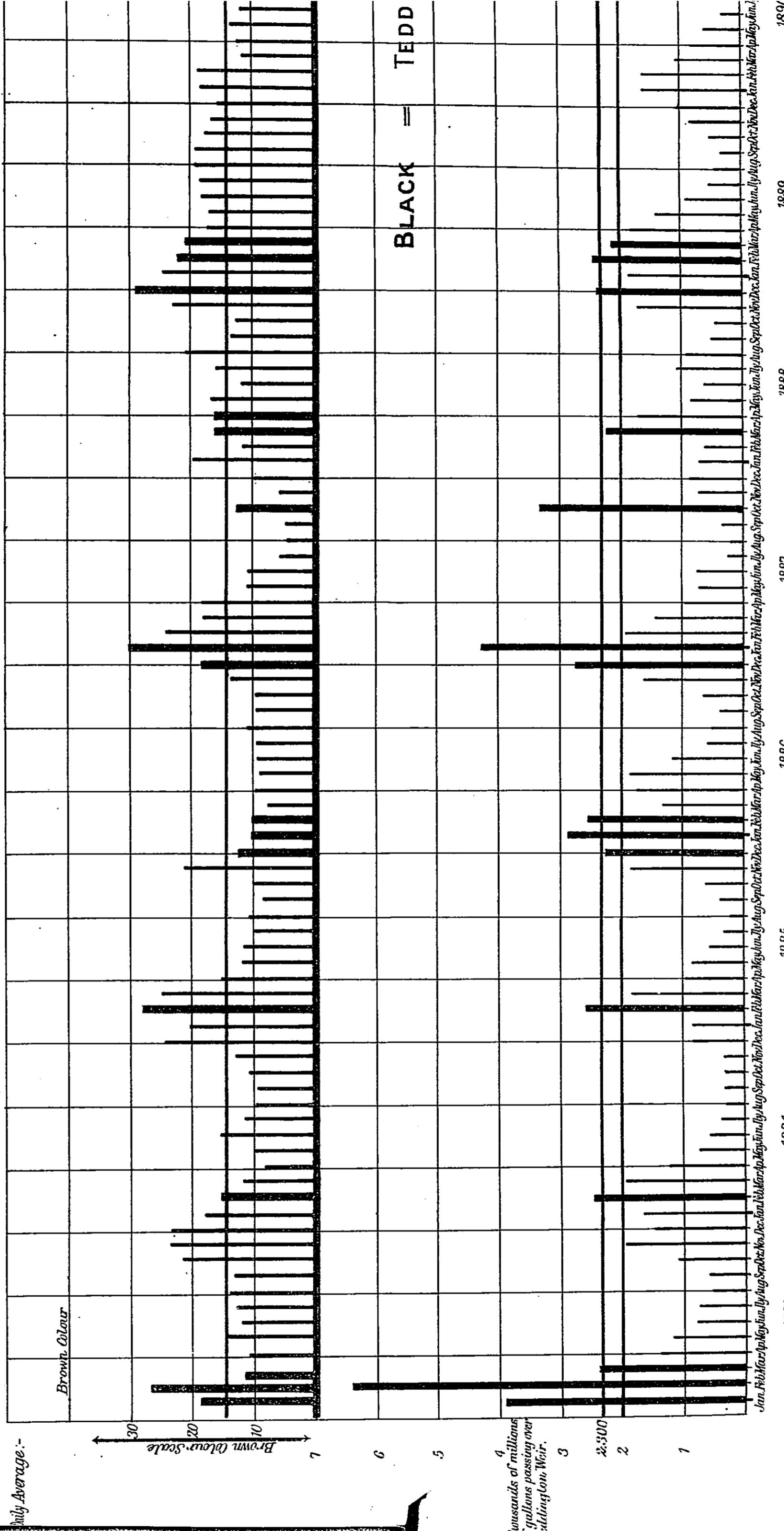
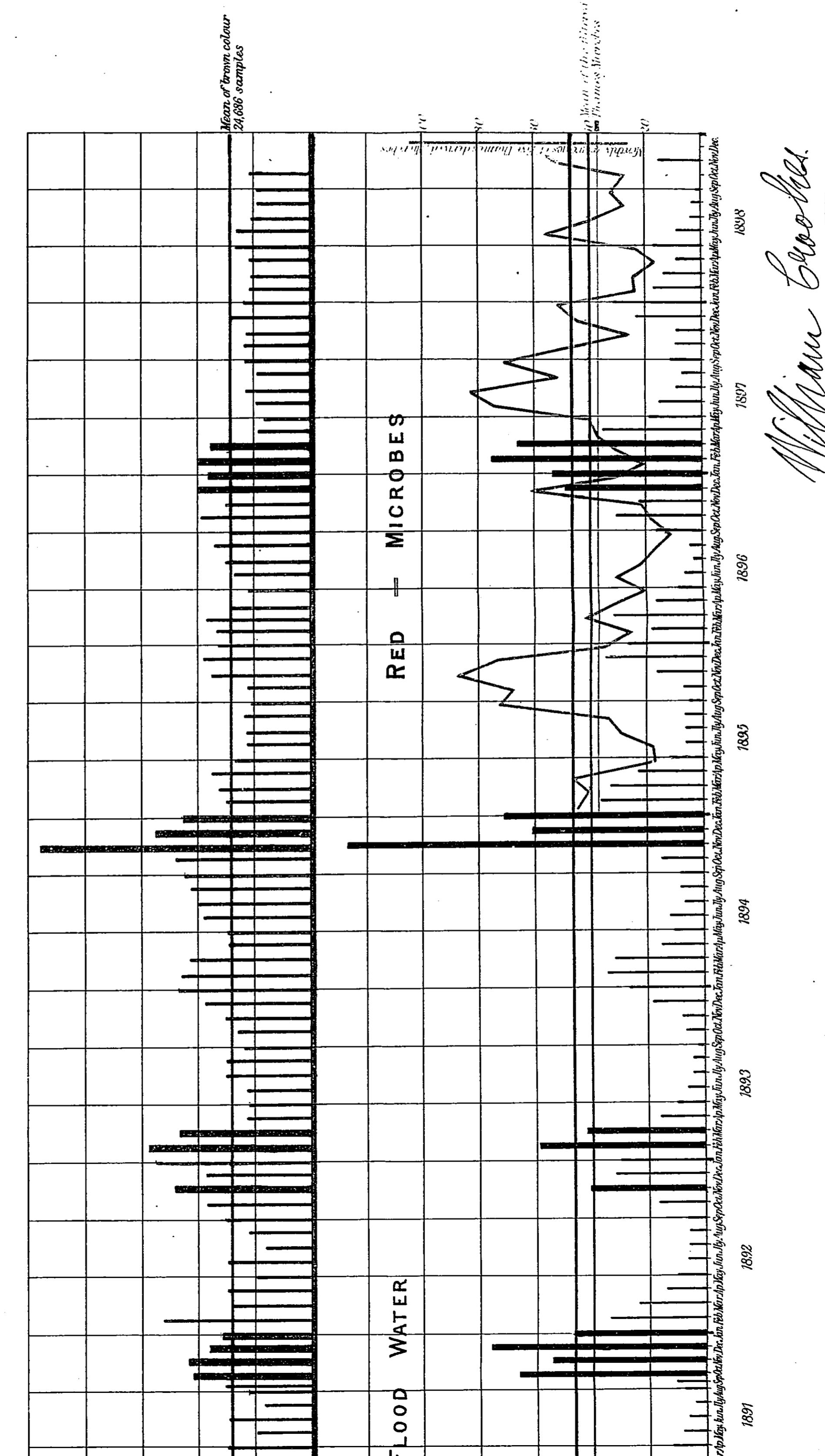


Diagram A.)

DO BROWN COLOUR.

DINGTON WEIR AND THE COLOUR OF CLEAR FILTERED
COMPANIES FROM 1883 TO 1898; ALSO THE MONTHLY
Y 1895 TO DECEMBER 1898.

th day. See question 21,474.)



Mission Brook.

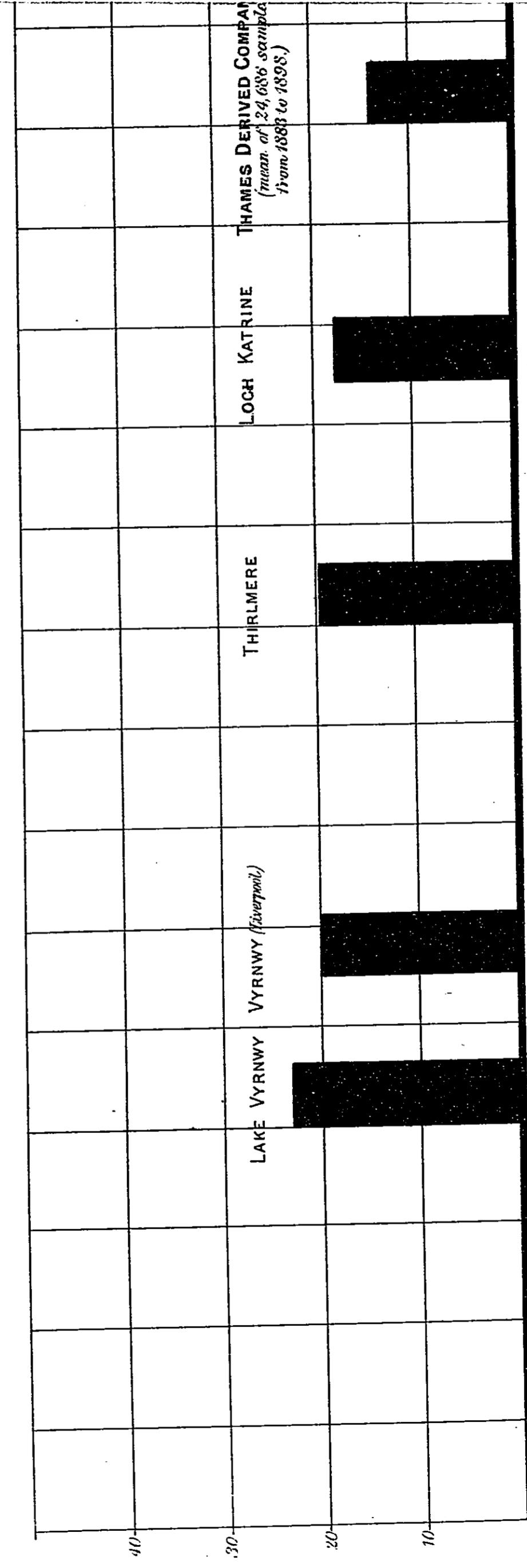
DIAGRAM 25.

(Sir W. Crookes' Diagram B.)

ORGANIC IMPURITY AND BROWN COLOUR.

DIAGRAM SHEWING COMPARISON OF BROWN COLOUR IN LAKE VYRNWY, THIRLMEDE,
LOCH KATRINE AND FILTERED THAMES WATER.

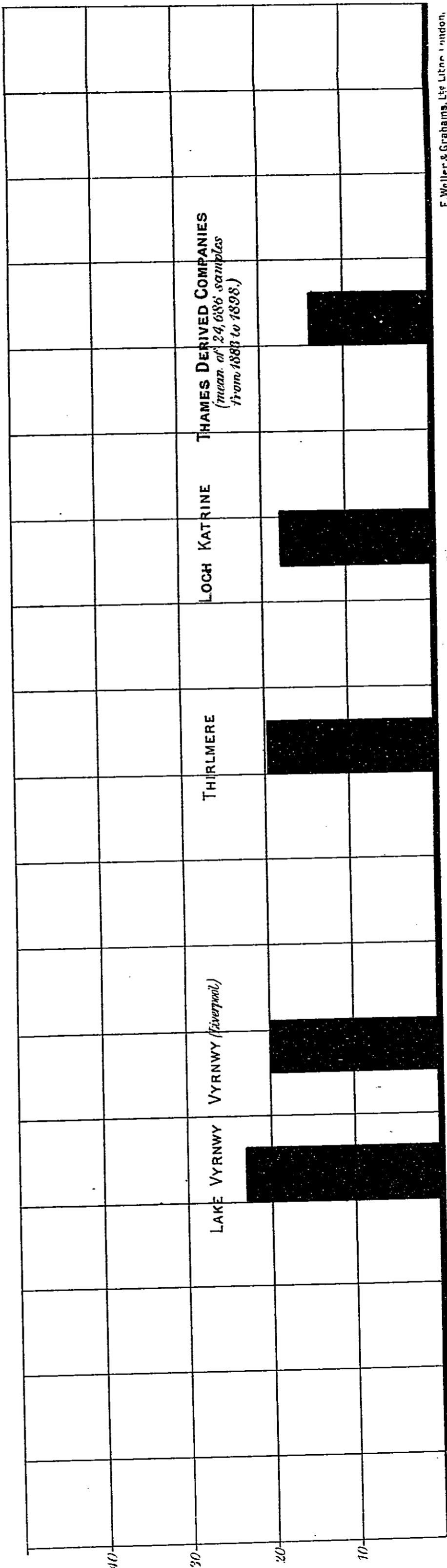
(Handed in by Sir W. Crookes on the 44th day. See Question 21.530.)



19th Dec. 1896. 21st Dec. 1896.
23rd Dec. 1896. 25th Dec. 1896.
27th Dec. 1896. 29th Dec. 1896.
31st Dec. 1896. 1st Jan. 1897.

15th Dec. 1896. 17th Dec. 1896.

William Crookes



E. Waller & Grahams, Ltd, 14, Upper London.

15th Dec. 1896.

17th Dec. 1896.

19th Dec. 1896.

15th Dec. 1896.

17th Dec. 1896.

15th Dec. 1896.

William Crookes

DIAGRAM 25.

(Sir W. Crookes' Diagram B.)

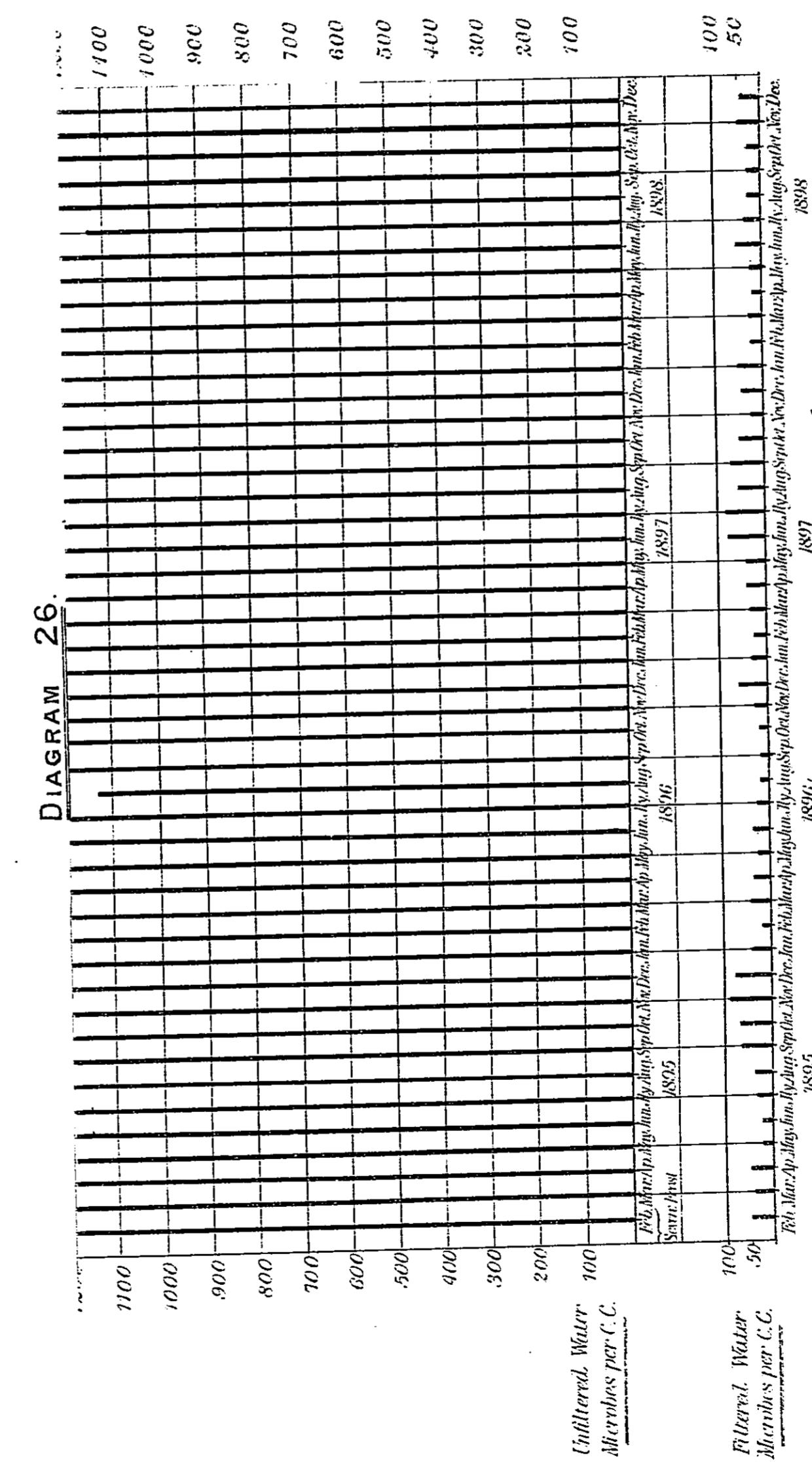
ORGANIC IMPURITY AND BROWN COLOUR.

DIAGRAM SHEWING COMPARISON OF BROWN COLOUR IN LAKE VYRNWY, THIRLmere,
LOCH KATRINE AND FILTERED THAMES WATER.

(Handed in by Sir W. Crookes on the 44th day. See Question 21530.)

15th Dec. 1896.

DIAGRAM 26.



E. Waller & Grahams Ltd. Litho. London.

Million Gooed.

DIAGRAM 26.
(Sir W. Crookes' Diagram C.)
DIAGRAM SHEWING THE NUMBER OF MICROBES IN FILTERED AND UNFILTERED
THAMES WATER FROM 1895 TO 1898.

(Handed in by Sir W. Crookes on the 44th day. See Question 21542.)

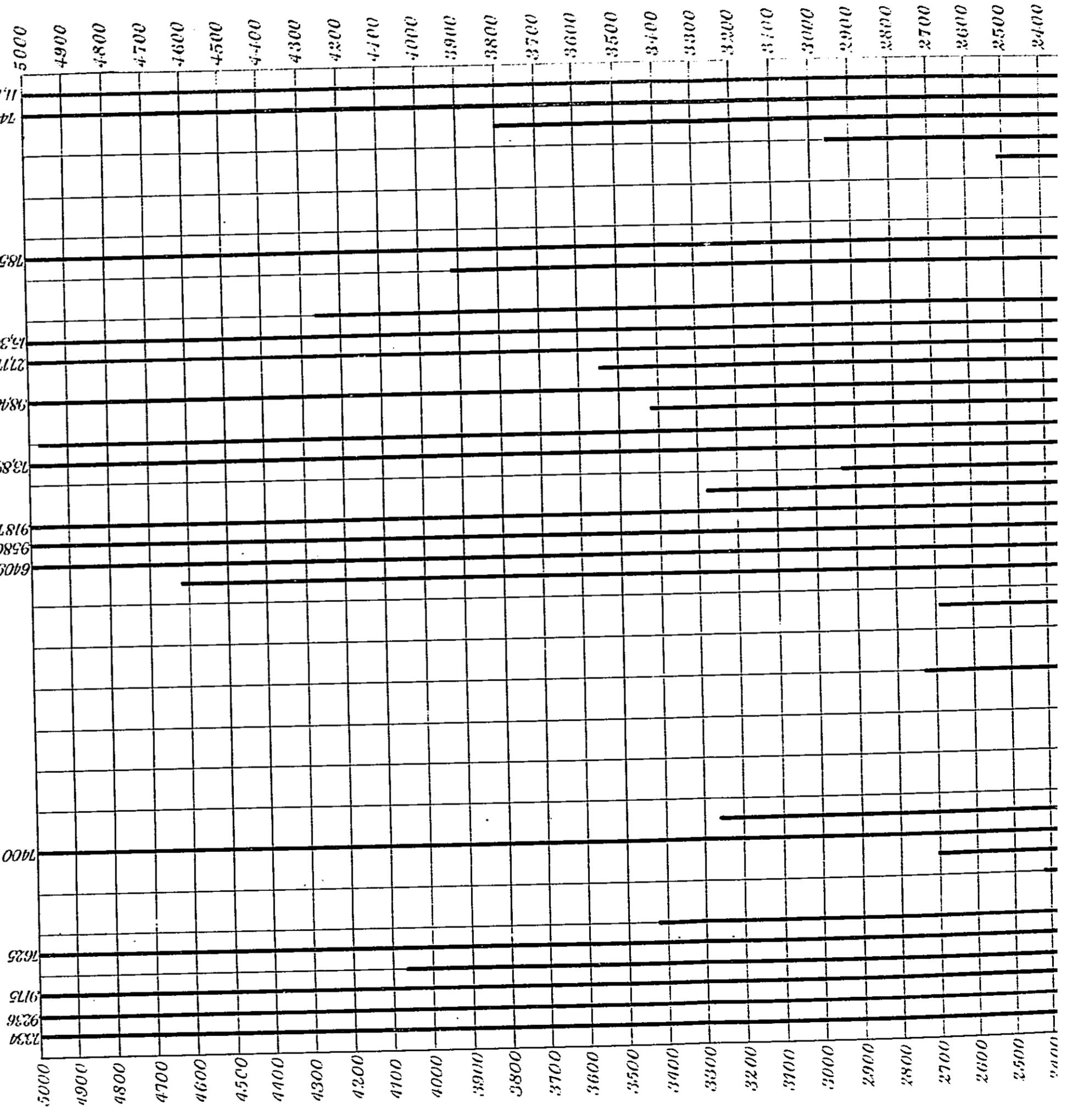


DIAGRAM 26

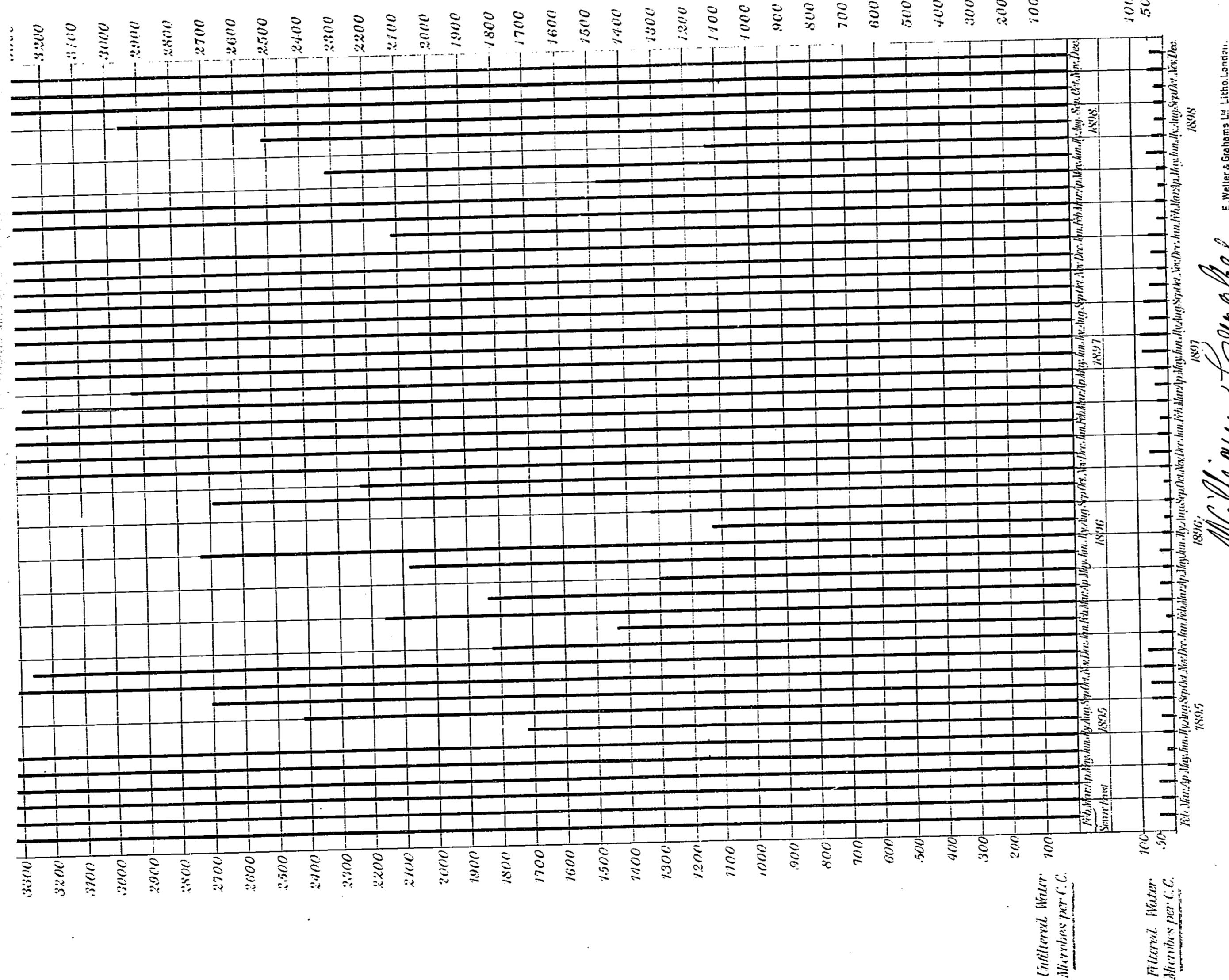


DIAGRAM 27.

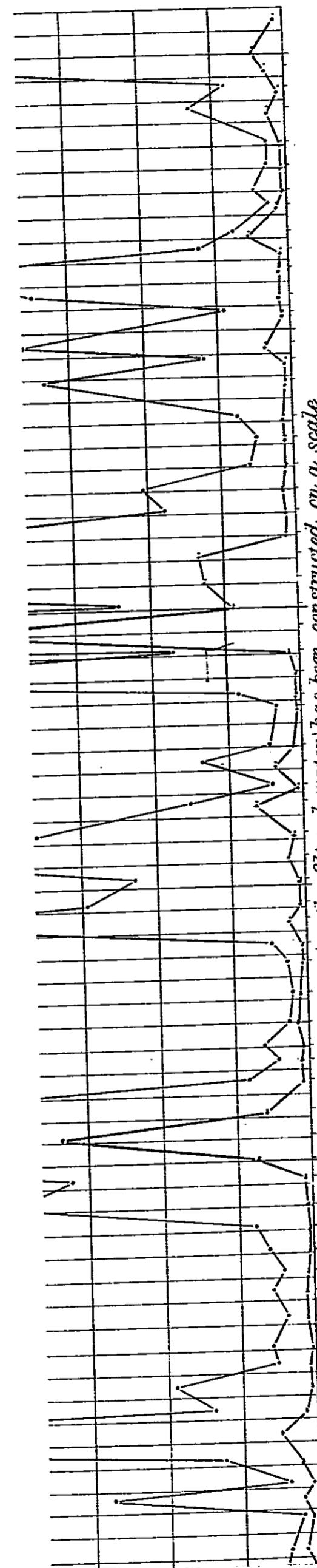
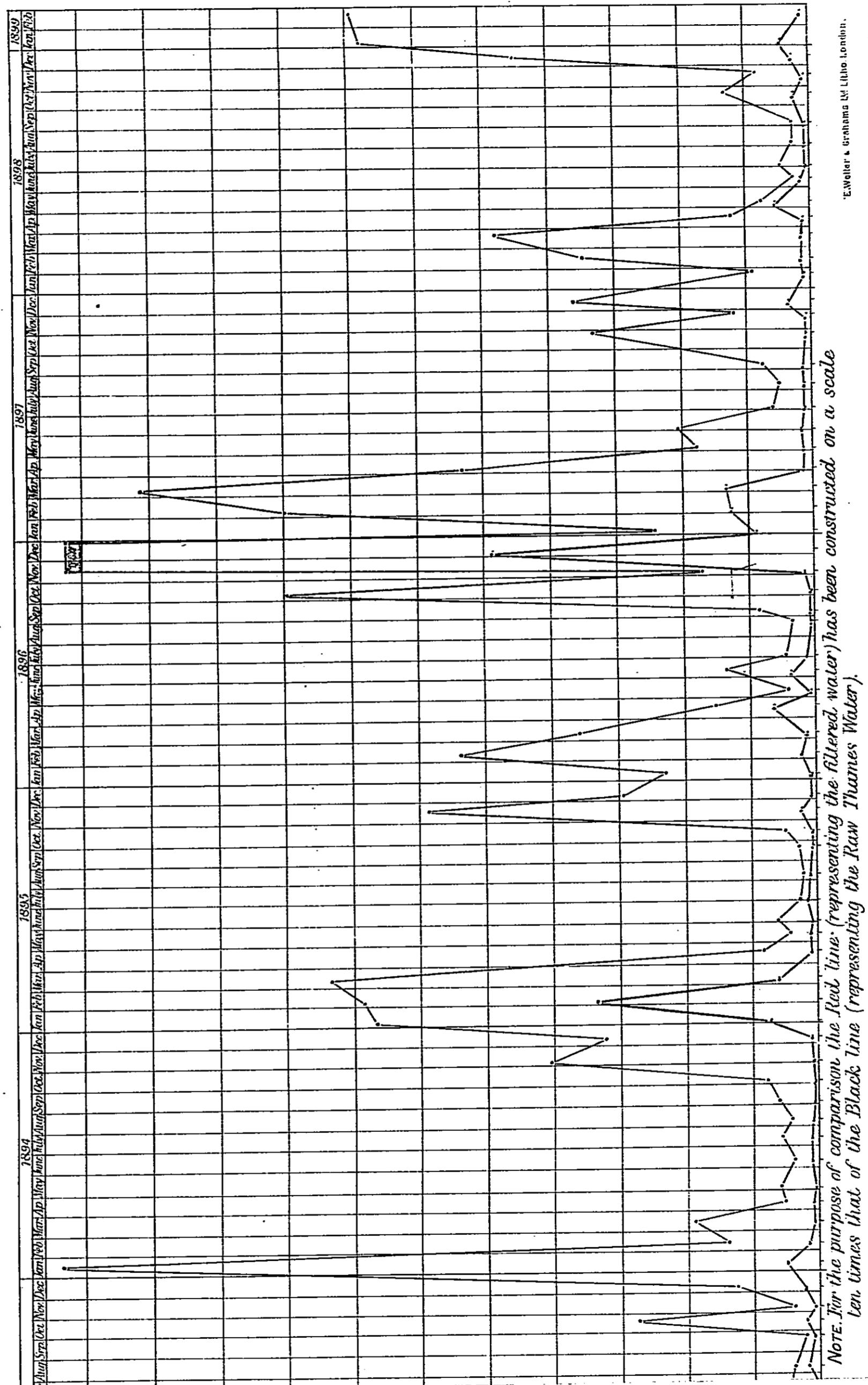


DIAGRAM 27.

DIAGRAM 27.
DIAGRAM SHEWING THE MICROBES IN RAW AND FILTERED THAMES WATER
FROM MAY 1892 TO FEBRUARY 1899.
(Drawn in by Sir Edward Frankland on the 37th day. See Question 28725.)

Black Line represents numbers of Microbes in Raw Thames Water.
Red Line represents numbers of Microbes in Filtered Thames Water. (Average of five Companies.)



E. Waller & Son, Ltd., London.

NOTE.—For the purpose of comparison the Red line (representing the filtered water) has been constructed on a scale ten times that of the Black line (representing the Raw Thames Water).

DIAGRAM 27.

