Correspondence re: "The base of St. Peter sandstone in southwest Wisconsin". 1959

Thwaites, F. T. (Fredrik Turville), 1883-1961
[s.l.]: [s.n.], 1959

Fig 1

Figure 2 Cross section of Steil exploration drill holes, near Highland, Wisconzin. The writer intdrprets the variation in top of the Prairie du Chien dolomites as showing a filled valley. A decoxidized shale bed ~~at the contact follows this surface and has been decoxidized~~. Older formations have been added from records of other wells.

Figure 8 Cross section from Verona to Madison, Wisconsin. Although the top of the St. Peter has been eroded the way in which the basal beds extend down to the Franconia sandstone strikingly indicates unconformity.

Figure 3. Fence diagram of ~~Subsurface relations near~~ Shullsburg, Wisconsin. No. 1 James is a diamond drill hole of U.S. Geological Survey exploration and shows some Prairie du Chien dolomite. No. 1 Shullsburg is the only hole which pentrated the Cambrian formationz. An unconformity is indicated below the ~~transition~~ basal beds of shale, chert, and dolomite.

Figure 4. Fence diagram of ~~subsurface conditions in~~ Dodgeville, Wisconsin. The writer ~~places~~ concludes an unconformity at the base of the ~~transition~~ beds of shale, chert, sandstone and conglomerate. These basal beds ~~are thickest where~~ appear to fill a valley ~~or depression~~ in the Prairie du Chien dolomite ~~surface.~~

Figure 6 Section ~~showing results~~ of exploratory drilling on Raisbeck property Meekers Grove, Wisconsin The relation of the shale, chert and dolomite basal St Peter ?
~~transition~~ beds to the Prairie du Chien dolomite indicates an unconformity. Older formations of Cambrian age were added from records of adjacent wells.

Figure 7 Cross section of two wells in Mt. Horeb, Wisconsin

In this place the replacement of the Prairie du Chien dolomite in No. 3 by sandstone and shale in No. 4 extends down only to the top of the Cambrian. An unconformity is more likely than a lateral change in deposition.

Figure 5. Fence diagram of ~~conditions in~~ subsurface ~~geology at~~ Monroe, Wisconsin. The transitionsl beds of shale, chert, sandstone and conglomerate bevel across the layers of the Prairie du Chien dolomite indicating an unconformity.

Figure 1. Chert rubble ~~in~~ road material pit neae Albany, Wisconsin
The writer explains ~~such~~ These deposits as ~~reworked~~ material derived from
the weathering of the older Pariaie du Chien dolomites and reworked by
the waters which deposited the overlying St. Peter sandstone.

13 April, 59

Dr. J. Harlen Bretz,
Rosenwald Hall, University of Chicago,
Chicago 37, Illinois

Dear Dr. Bretz:

Enclosed is my recent paper on Baraboo. Hope it does not shock you too much but the ideas are not very new. It is a reworking of the paper of 1935 for the Kansas Kansas Geological Society guidebook.

Thank you for your recent letter about the paper on the St. Peter base. It may meet a rough reception for many geologists were brought up to think that samples from cable tool holes were not worth looking at. I was one of them but I learned better the hard way. I feel that my views deserve listening to . After all they rep resent over a half half century of work. I agree with Flint on the horizon he called the base but what I think is the real base cuts down to the Cambrian Franconia formation.

With best regards, I am,

Sincerely yours,

4-2-59

THE UNIVERSITY OF CHICAGO
CHICAGO 37 · ILLINOIS

THE JOURNAL OF GEOLOGY

Editorial Office

March 30, 1959

Professor F. T. Thwaites
41 North Roby Road
Madison 5, Wisconsin

Dear Professor Thwaites:

I have waiting to reply to your letter of inquiry about your manuscript submitted to the JOURNAL OF GEOLOGY but (through no delay on Professor Bretz's part) your paper has been held in the hands of a reader. Day by day I have expected to have a conclusive answer but now I realize that we shall have a small additional wait.

Actually scheduling of the paper would not be delayed in the event of its acceptance by the Board because the JOURNAL has been struggling with a backlog of papers awaiting publication.

However, I shall contact you very soon.

Sincerely,

Marguerite Edwards

Marguerite Edwards
Managing Editor

HOMEWOOD, ILL.
MAR 17
6-PM
1959

THIS SIDE OF CARD IS FOR ADDRESS

Dr. F. T. Thwaites,
41 N. Robey Rd.,
Madison 5
Wisc

Dear Fred. I turned your Ms. over to the Journal promptly. Some weeks later I enquired about its status & was told that it was receiving the regulation critical reading by some selected authority. I'll prod the Journal again. This delay is unwarranted.

Best H Pratz

10 March, 1959

Dr. J. Harlen Bretz,
Rosenwald Hall,
University of Chicago,
Chicago 37, Illinois

Dear Dr. Bretz:

Last 20th of September at Dr. Leighton's conference on the Pleistocene I handed you a manuscript on the problem of the base of the St. Peter sandstone which I understood you had placed in the office of the Journal of Geology. I have heard nothing from it since and a letter to the managing editor a short time ago has not been answered. May I impose on you to try to find out what has become of it. I have a carbon and the originals of the illustrations. It adds new data to Flint's paper rather than denying his conclusions. It appears that we do not agree on the real base of the St. Peter. I studied the problem since 1914 so think my conclusions deserve attention I have a lot of subsurface data not considered by Flint

With best regards

Sincerely yours,

17 Feb., 1959

The Journal of Geology,
Rosenwald Hall,
University of Chicago,
Chicago 37, Illinois

Attention Miss Marguerite Edwards,
Managing Editor

Dear Madam:

On 20th September last I handed Dr. Bretz a manuscript on the problem of the Base of the St. Peter sandstone. He said he was going to leave it in the office of the Journal

This paper did not have with it the originals of the illustrations which I intended to send later. It is the result of nearly a half century of investigation of this subject including much data not available to the auth Dr. Flint, of a similar paper which appeared a short time in in the Journal. I therefore felt that it should properly appear in the same publication. To date I have heard nothing more about the manuscript and would like to know its status. The original tracings of the illustratio could be sent at any time possibly after some slight retou ng ing.

Very truly yours,

April 14, 1958

Mr. Tom Mullins,
U. S. Geological Survey
School of Mines,
Platteville, Wis.

Dear Mr. Mullins:

I am leaving the drill logs you lent me with Dr. Sutton at his suggestion since he says you will be here Wednesday Wednesday. Thank you for the loan. The shale intervals in Kennedy #A and#4 are not entirely clear. There is no mention of dolomite content but I am presuming from what you showed me and told me that they are non-dolomitic shale of the "transition beds" type. If so it raises a question of the correlation. There are two possible views: (1) the transition beds are basal St. Peter or (2) these beds which contain some dolomite strata are an unknown phase of the Prairie du Chien entirely unlike the type exposure of the Shakopee. In either case they bevel the Prairie du Chien and cut down as deep as the Franconia in places. These strata are little known in outcrop because of their softness. There is evidence not of slump due to mineralization but of sliding due to slump over the irregular top of the solid dolomites.

I am enclosing bleline prints of the illustrations for may paper. These are not for publication until I get mine out. Flint is right that there is no unconformity at the level he chose for the bottom of the St. Peter but there is a prof und one lower down.

Sincerely yours,

Heller, R. L., Status of the Prairie du Chien problem: Geol. Soc. America Guidebook, Field Trip No. 2, 1956, Pp. 29-40.

Notes general disagreement in use of names. Desires to revise Prairie du Chien to formation status leaving ascending Oneota, New Richmond and Shakopee as members. Drops term Root Valley once used for the sandstone member.
Fossils indicate early to possibly midele Canadian for Oneota, late Canadian for the other two members. No evident unconformities but continuous deposition from Croixan to end of Canadian. Some used lithology, others fossils
Difficult to separate either lithologic or biostratigraphic units. Notes disagrement o Powers and Sardeson on relations at Shakopee. Author not sure but wishes to retain name. New Richmond sandstone same as Root Valley ss. Kasota sandstone and Blue Earth siltstone are not formations but local facies.in Oneota.
Defines Prairie du Chien as predominantly dolomite between roixan and St. Peter. Conformable on Jordan. Notes Flint on contact ablve.No es minor shale, sandstone and glauconite in Oneota 70-170 feet thick.
New Richmond sandstone 5 to 45 feet thick. Interbedded dolomite. Notes Andrews paper Not equal to Roubidioux sandstone by fossils.
Shakopee is much like Oneota but may be more sandy and oolitic. 37 to over 50 feet thi

Hall, C. W. and Sardeson, F. W., Magnesian series of the northwestern states: Geol. Soc. America Bull. vol. 6: 177-181, 1895

Powers, E. H. Stratigraphy of the Praireidu Chien: Kansas Geol. Soc. Guidebook ninth annual field conference: 390-394, 1935

The Praire du Chien problem: Univ. Iowa Studies, 16: no. 6, : 421-449, 1935

Sardeson, F. W., Type outcrops of Minnesota River Valley: Pan-Am. Geol. 41: 107-122mxk1924

„Shakopww formation: Pan-Am. Geol. 62: 29-34, 1934

efense if Shakopee titale: Pan-Am. Geol. 64: 279-285, 1935

Stsuffer, C. R., Type Paleozoic sections in the Minesota Valley: Jour. Geol 42: 337-357, 1934

Stauffer, C. R., and Thiel, G. A., The Paleozoic abd related rocks of southeastern Minnesota: Minnesota Geol. Survey Bull. 29, 1941

Trowbridge, A. C., and Atwater, G. I., Stratigraphic problems in the upper Mississippi Valley: Geol. Soc. Am. Bull. 45: 21-80, 1934

65-73

Flint, A. E., Stratigraphic relations of the Shakopee doomite and the St. eter sandstone in southwestern Wisconsin: Jour; Geology 64: 396-421, 1956

Study begun in 1950 to find cause of irregular top of Shakopee.
Limited to three counties of S. W. Wisconsin
Review previous opinions. Includes mine. Stratigraphy reviewed in fine print.
New Richmond not identified with certainty in this area.
"Separating the impure dolomite and dolomitic limestone from the overlying St. Peter sandstone is a contact zone, which in places is more than 10 feet thick and consits of intercalated shale, sandstone, and admixtures of these, locally cemented by dolomitic material. This interval is considered by some geologists as a basal phase of the St. Peter sandstone, but others have interpreted it as a weathered residuum on the upper Shakopee surface."
" Chert accumulations, interpreted chiefly from comminuted drill samples as a conglomerate in the basal beds of the St. eter sandstone, and shale at the contact, considered as a weathered residuum on an exposed Shakopee surface, have also been cited as evidence of pre-St. Peter erosion of the Shakopee." Describes domes in Shakopee which cause most of irregularity.
Gives log of No. 1 James but places all rock below clen St. Peter as Shakopee.
Crow Branch No. 5 is also treated in same way."The strata penetrated in this drilling (No. 4 Kennedy, SWSW 29*1-1E) are similar in several ways to those in the James mine drill core. Normal Shakopee dolomite and dolomitic limestone occur very near the upper limit of the shaly interval, and therefore the enitre shaly zone is assigned to the undifferentiated Shakopee and Oneota dolomite." "Another similarity to the James mine core is the zone of extremely heavy chert. ---Other drill holes 300-900 feet away did not penetrate similar chert concentrations." " it is suspected that the chert represents areas of former dolomite replaced by silica from the solutions that dissolved out much of the carbonate in the interval." "The solution effects indicated in the drill core from the James mine drill hole and in the samples from the Kennedy mine hole 4 differ from those in the contact zone generally only by depth of penetration. The other features here interpreted as evidence of solution and copaction-leached chert, concentration of residual clays and silt, slickened shale surfaces, and thinned, stretched, and broken sandstone layers- are similar in all essentials." Foujd no evidence of conglomerate in bssal St. Peter. Suggests leaching under some of the ore bodies above.
Cites evidence of solution of dolomite to depths of 110 feet. leaving punky material or cotton-rock. Thinks it subsurface leaching. Drag folds.
Small faults.

THE UNIVERSITY OF CHICAGO
CHICAGO 37 · ILLINOIS
THE JOURNAL OF GEOLOGY

Editorial Office

August 1, 1959

Professor F. T. Thwaites
41 North Roby Road
Madison 5, Wisconsin

Dear Professor Thwaites:

With all apologies for the time that has passed (due to my six week illness and critics that also dispersed time), the Board of Editors returns your manuscript with the request, or recommendation, that it be rewritten to be acceptable to the JOURNAL.

As a guide for revisions we enclose comments by the several readers. We hope that you will be able to do this and re-submit the paper to the JOURNAL.

I shall be leaving the JOURNAL and Chicago, and Mrs. Bertha Mayer is to be our new managing editor.

Sincerely,

Marguerite Edwards

Marguerite Edwards
Managing Editor
JOURNAL OF GEOLOGY

Enc.

Comments on Thwaites "The Base of St. Peter Sandstone in Southwestern Wisconsin"

Suggest eliminating "Nature of subsurface data" page 3. Also cut reference to U.S.G.S. bottom page 2.

Author is wrong in stating that the shale and chert rubble at the base of the St. Peter is not well known, and indicates as much himself by stating later that Norton wanted to make a formation of it.

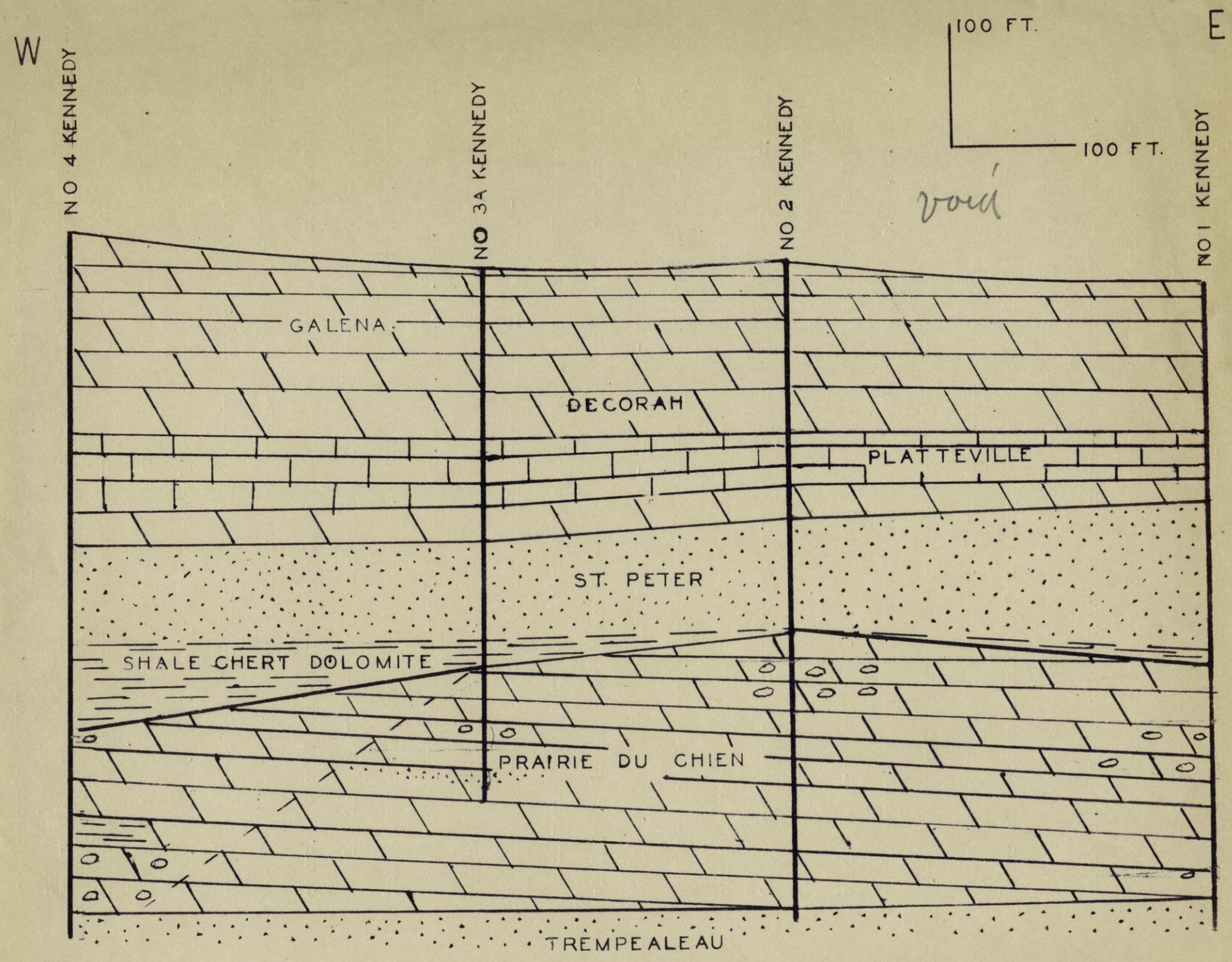
Concerning his statement of the problems: (1) Can the transition beds belong to the Prairie du Chien. This is essentially a straw man. No one seriously entertains the idea. (2) Is the unconformity at the top or bottom. This is the same as problem 1. (3) The position of the base of the transition zone is uncertain. This is correct, but it is local and results from lack of adequate data.

It is not good nomenclature to call this material "transition beds."

....In general I agree with Thwaites. Evidence is strong for a major unconformity at the base of the St. Peter. .... Author does not give adequate recognition to the extensive solution effects present at the base of the St. Peter noted by Flint.

I don't like illustrations. Simple cross sections rather than triangular panel diagrams would be more effective. Some of the printing on large figures is too small to reproduce.

This paper has been very carelessly written. Apparently the suthor just sat down at a typewriter and ran it off. It might also be a little better organized.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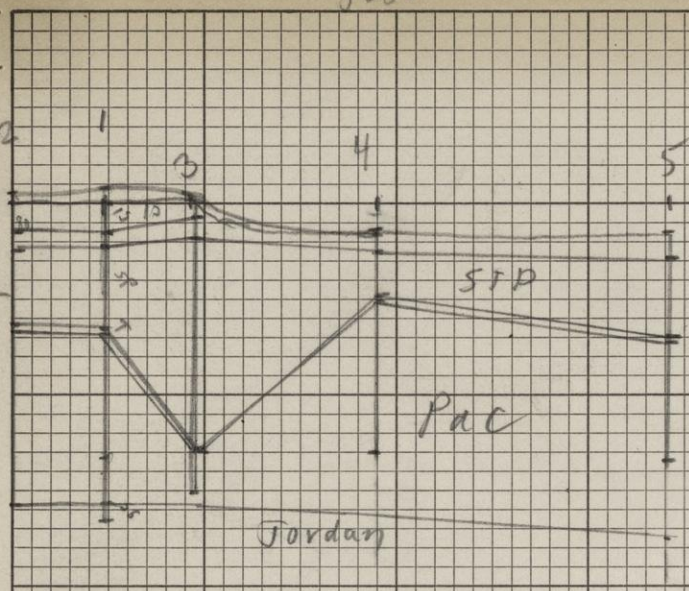

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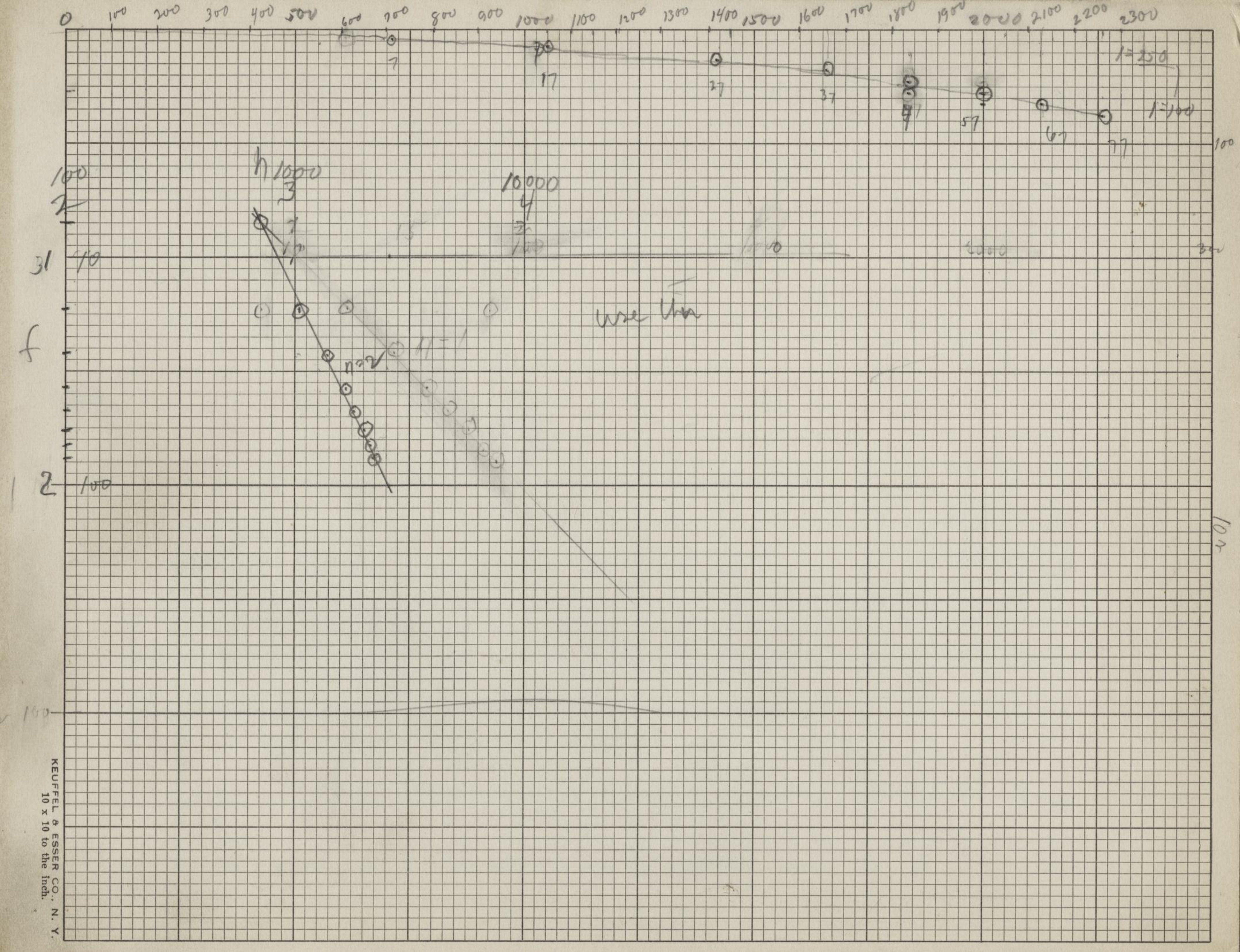

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