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SOCIAL SCIENCE

A study of the cause of poor spelling ability of
school children and some suggested remedies.

A Thesis

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Table of Contents.

Chapter I.

	Page.
I. Introduction - - - - -	1-4

Chapter II.

II. The Reliability of the Experiment- - - - -	5
------------------------------------------------	---

Chapter III.

III. The Ayers Spelling List-- - - - -	6
----------------------------------------	---

1. Source of Material

2. Selection of words

Chapter IV.

IV. The first Test- - - - -	7
-----------------------------	---

1. By whom given

2. Results

Chapter V.

V. Statement of Results - - - - -	8
-----------------------------------	---

1. Plan of diagnosing

Chapter VI.

VI. Plan of work- - - - -	9
---------------------------	---

Chapter VII.

VII. Two Devices - - - - -	10
----------------------------	----

1. Spelling Consciousness

2. The Sentence Method

Chapter VIII.

VIII. Results of the Semester Tests- - - - -	14
----------------------------------------------	----

	<u>Page</u>
<u>Chapter IX.</u>	
IX. Comparison of oral with written spelling- - -	17
<u>Chapter X.</u>	
X. The Mental Test- - - - -	20
<u>Chapter XI.</u>	
XI. The Tidyman Tests - - - - -	21
<u>Chapter XII.</u>	
XII. The Final Test - - - - -	23
<u>Chapter XIII.</u>	
XIII. Conclusions - - - - -	24
<u>Chapter XIV.</u>	
XIV. Bibliography- - - - -	26

Chapter I.

Introduction

In preparing this thesis the writer had three objects in view: (1) To discover, if possible, the cause of poor spelling ability; (2) To attempt to provide a remedy; (3) To carry on the remedial measures under everyday school conditions.

In studying the spelling ability of school children, there are a number of questions that present themselves: (1) What words should be selected for the test; (2) How many words should be used; (3) How difficult should the words be; (4) Should the words for the test be given in sentences, or dictated as a spelling lesson.

There are a great many words in the English language. Some of these the average person never uses, and some are used very frequently. For practical purposes, there is no special advantage in being able to spell words which are never used. Nor is it a just or adequate test of the spelling ability of a child to use, as a test, words taken from the ordinary school speller. What words were used in this study, and the manner of giving the tests, will be explained later in this thesis.

Experience has demonstrated that, with the same school opportunities, pupils do not acquire the same spelling ability. Furthermore, that the longer the pupils remain under the same, or equal, school conditions, the more apparent becomes this difference. In other words, the same instruction given to individuals of different spelling ability, will

have a tendency to produce a still greater difference. This being the case, it is just as unreasonable for a teacher to assume to instruct her pupils as a unit, as it would be for a physician to assume to prescribe the same remedy for all the ills of a community.

The theory that a good method invariably reduces the variability among the members of a class, and tends to produce a closer grouping about a mean or average cannot be verified by experiment.

This theory has produced the educational fallacy of forcing the exceptional pupil to keep pace with his class, and the slow one to advance at a rate beyond his ability, while only the normal pupil advances at his regular speed.

Dividing the school into twelve arbitrary grades is very convenient from an administrative point of view; equality of attainment is admitted to be impossible in actual practice, but the desirable end to be sought; the progress of the class as a unit is the hope and dream of all instruction. But none of these aims or purposes can be realized.

That there is a great waste of time and effort in trying to teach the class as a unit should be apparent to anyone who has given the question due consideration.

Close grouping is desirable from the viewpoint of the school system, but if in realizing this aim the individual pupil is made secondary to the maintenance of the system, then the school is not performing its proper function.

In theory, nothing short of individual instruction will eliminate this loss of time and effort. This is impossible under our present school system. However, divided classes are possible, and the grouping of pupils of similar abilities for special instruction can be done under ordinary school room conditions and by this means the individual unit can be approached.

Even in small groups of pupils with similar ability, the inability of pupils to spell cannot be traced to the same cause or causes. Evidently then, it becomes necessary to make a diagnosis of each pupil, in order that he may be given the proper instruction.

Chapter II.

Reliability of the Experiment.

It cannot be asserted that the data available for this study are such as to give more than a rough approximation to a precise salution of the issue in question.

The group under consideration was comparatively small and the measures are liable to the error of poor testing. It is, nevertheless, significant of what a more adequate study would discover, and as such, is worthy of consideration. Its reliability probably would compare favorably with other studies of a similar nature, made under similar conditions, and has a positive usefulness as indicating how a work of this nature may be carried on under every-day school conditions.

While this was a study of spelling only, any other grade subject could be treated in a like manner.

Chapter III.

The Ayers Spelling List.

In determining the words most commonly used by grade pupils, newspaper articles, and the compositions and letters of school children were examined. From these sources, Mr. Ayers determined the words that occur most frequently in every day usage.

The material examined aggregated more than 368,000 words, written by 2500 different persons. It was the original intention of Ayers to secure a list of 2000 words, but he found this impossible because the material examined was found to consist of a few words used many times, and a larger number of words used only a few times. He found that fifty words were used so frequently that they made up almost one-half of the material examined. In order to secure a list of one thousand words more frequently used, it was necessary to include words which were found only forty-four times in the 368000 words of material used.

Ayers, L. P. Measurement of ability in Spelling.
Bulletin of the Division of Education, Russell Sage
Foundation. (New York City 1915)

Chapter IV.

The First Test.

Early in October, the Ayers spelling tests were given in all the grades of the Moscow public schools, from the second to the eighth, inclusive. These tests were given by the members of the Educational Tests and Measurements class of the State University of Idaho. The class had previously made a study of the different spelling tests, and was familiar with the plan of conducting them. When the work was graded, it was discovered that a certain 4 B grade of 43 pupils, had made a score of 35%. Of these 43 pupils, 18 had grades below 50%, ranging from 0 to 45. The medium score of this lower group was $27\frac{1}{2}\%$, and of the entire school $67\frac{1}{2}\%$.

Graph Number I on the following page shows the relative standing of the school, grade 4 B and the experiment group.

Figure Number I shows the position of the 18 pupils under experiment.

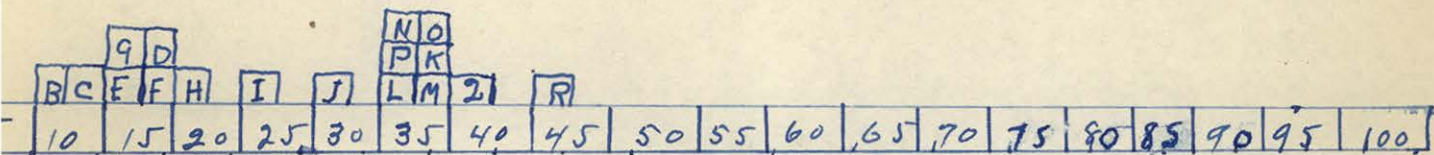
Graph No 1

October 1921



Figure I.

October, 1921.



The eighteen pupils in this experiment are designated by letters from A to R, inclusive.

Chapter V.

Statement of Results.

A class test presents a very accurate condition of the spelling skill of the class as a whole, but is very unreliable as a measure of the individuals within a class. Locating the pupils of poor spelling ability was a very simple matter, but locating the cause of poor spelling was a more difficult undertaking. In order to discover, as nearly as possible, the cause of poor spelling in this group of pupils a definite plan was used. The writer tested each pupil, privately, on the following points; the sounds of the letters, including the different vowel sounds, the sounds of different groups of letters as ei, ai, ch, sh, and tion; the pronunciation of common words; knowledge of the meaning of words; vision and hearing; memory; ability to read and interpret simple reading material. A careful record was made for each pupil and later the findings were discussed with the class room teacher.

The eighteen pupils under experiment were grouped in one part of the room in order that the experimental work could be carried on without disturbing the others. They were only given from four to six minutes extra time each day, and this period was placed at a time in the daily program where it would not be taken from, or interfere with, the regular recitation period. They were given the regular spelling drill with the words of grade 4 B, and in addition, from four to seven new words daily. These words were taken from the 4,000 word list. During the four to six minute period, the corrective measures for each individual, were used, and a drill on the new words was given, using the plans described on the following pages.

Chapter VI.

Plan of Work.

Chapter VII.

Two Devices.

In addition to the corrective measures, two devices were used in carrying on this experiment. One of these "Developing a Spelling Consciousness" by Herbert G. Lull from "A plan for Developing a Spelling Consciousness" in the Elementary School Journal, Vol. 17, page 355, has yielded gratifying results in the Training School of the Kansas State Normal, and its use in the present study, leads the writer to the conclusion that it is one of the very best devices for improving spelling ability. "When the spelling sentences or lists have been written, each pupil is required (1) to mark each word the spelling of which he doubts; (2) as far as possible, he is encouraged to test the validity of his doubts by known means outside of the dictionary, finally checking up all doubted words by using the dictionary; and (3) he then writes all of the misspelled words, which he has thus detected, correctly spelled in separate lists; at this point the pupils' papers are exchanged, the teacher spelling all words, and the pupils marking those found to be misspelled on the papers; and finally (4) when the papers are returned to their owners, the additional misspelled words discovered should be added to their individual tests.

The pupils' spelling is scored by the teacher on the basis of the correctness of his doubts as well as upon the number of words spelled correctly. In the absence of a scientific determination of the relative significance of spelling words correctly and doubting correctly, the same value is assigned to each. The pupils are scored both for doubting words spelled correctly, and not doubting words spelled incorrectly."

The other plan was the sentence method. By this plan, the words to be spelled were embedded in sentences and these sentences read to the pupils who were required to write them in a definite length of time. Freeman's standard rate for handwriting was used for the ^{↑ *timed sentences.*} 4th grade is 1.18 seconds per letter, but, ^{*His standard for the*} as the pupils in this experiment were the lowest half of the grade, they were allowed 1.5 seconds per letter.

Freeman, F. N. Psychology of the Common Branches.

From a practical standpoint this is unquestionably the better method. In writing letters and compositions, the spelling must be carried on in the margin of the attention, because the ideas which are being expressed occupy the focus of attention. By using the words to be spelled, embedded in sentences and dictated rapidly enough to force the pupil to write at an average speed, we are enabled to measure the spelling ability that functions in the pupil's ordinary writing.

In carrying on the experiment under this plan, three definite ideas were kept in view:

- (1) The sentences expressed thoughts within thinking range of the pupils;
- (2) The length of the sentences varied but little;
- (3) The words to be spelled were placed as near the beginning of the sentence as possible, and never appeared as the last word of the sentence.

During the first half of the experiment the time was divided about equally between the two plans, but during the last half, a greater part of the time was given to the timed sentence.

Chapter VIII.

Result of Semester Test.

On January 12, the regular semester examination in spelling was given. Fifty words were used for the examination in grade 4 B, twenty-five being taken from the adopted speller and twenty-five from the Ayers list. The median for the entire grade was 90, and for the eighteen pupils used in this experiment, $83\frac{1}{2}$.

Graph II. shows the relative standing of the experiment group, and grade 4 B in the semester examination.

Figure II. shows the position of each individual pupil in the experiment group, in the same examination.

Graph No II

January 12, 1922

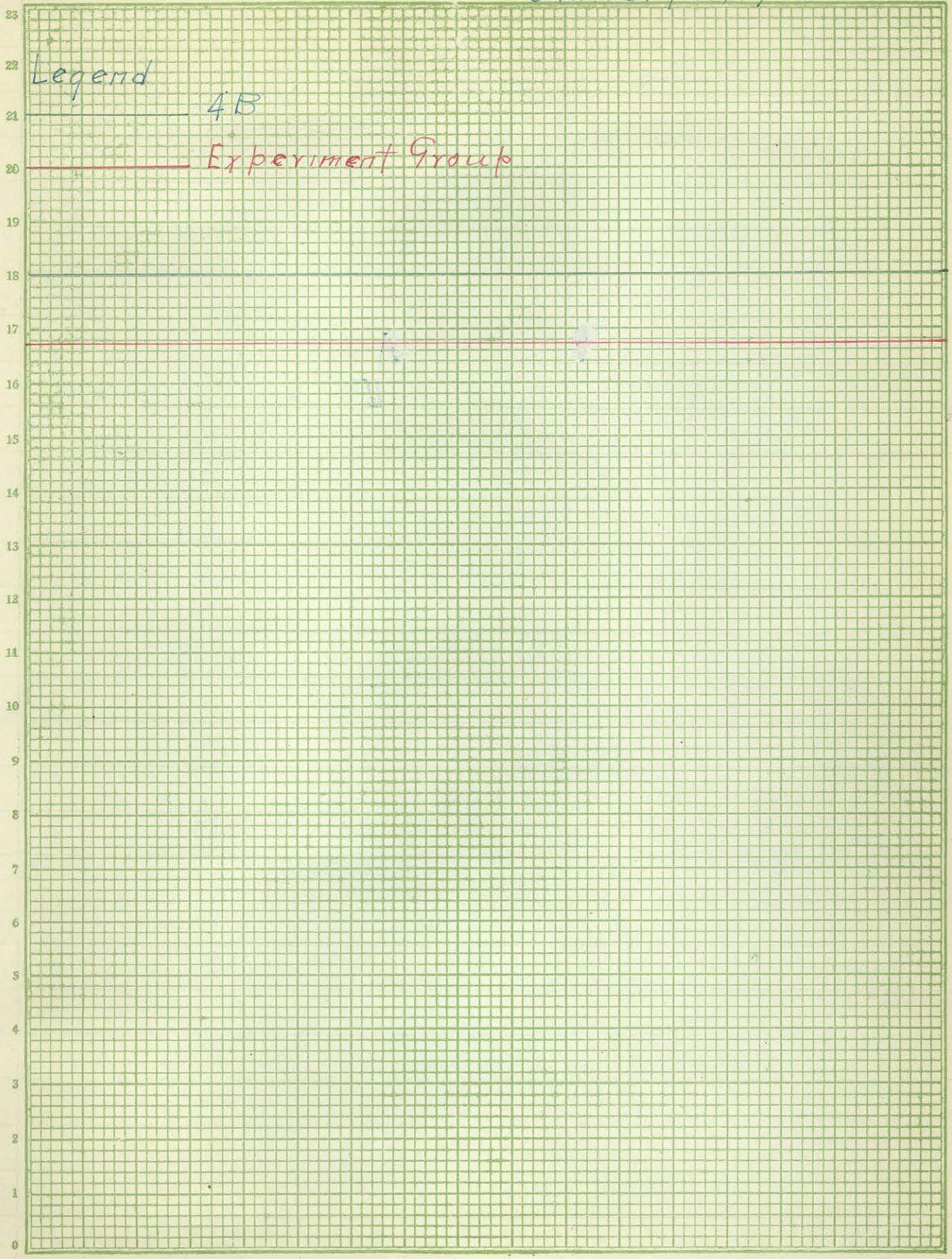


Figure II.

January 12, 1922.

					A						HI	C		E	f	B	M	N	2L	J	P	O	K	D	R
10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100							

At the beginning of the second semester, eight of the pupils in the experiment group were promoted to grade 4 A, and the work during the last half of the year was carried on under the supervision of two teachers.

Hereafter, when it is necessary to speak of the two groups, one will be designated group Number 1, and the other group Number 2. Also, the teachers will be designated Teacher Number 1, and Teacher Number 2.

In order to determine the relative standing of the two groups with their respective grades, the writer gave a test in both rooms on January 19th. The words used for this test were taken from column H of the Ayers list. Twenty words were used.

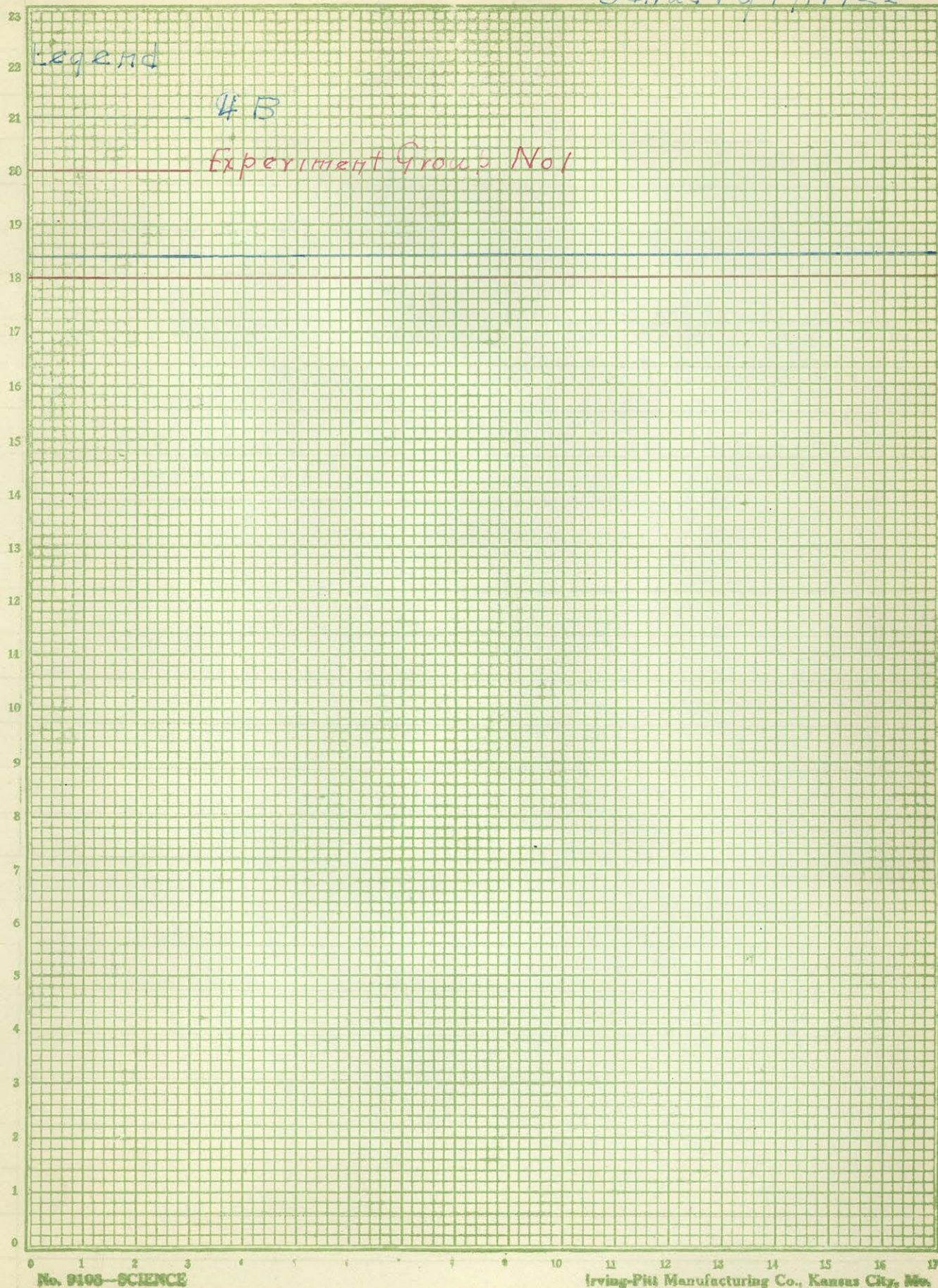
Graph III. shows the relative standing of Group Number 1, with the remainder of grade 4 B.

Graph Number IV. shows the same for Group Number 2, and grade 4 A.

Figure III. shows the position of each pupil in the experiment group.

Graph No III

January 4, 1922



Graph No IV

JANUARY 19, 1922

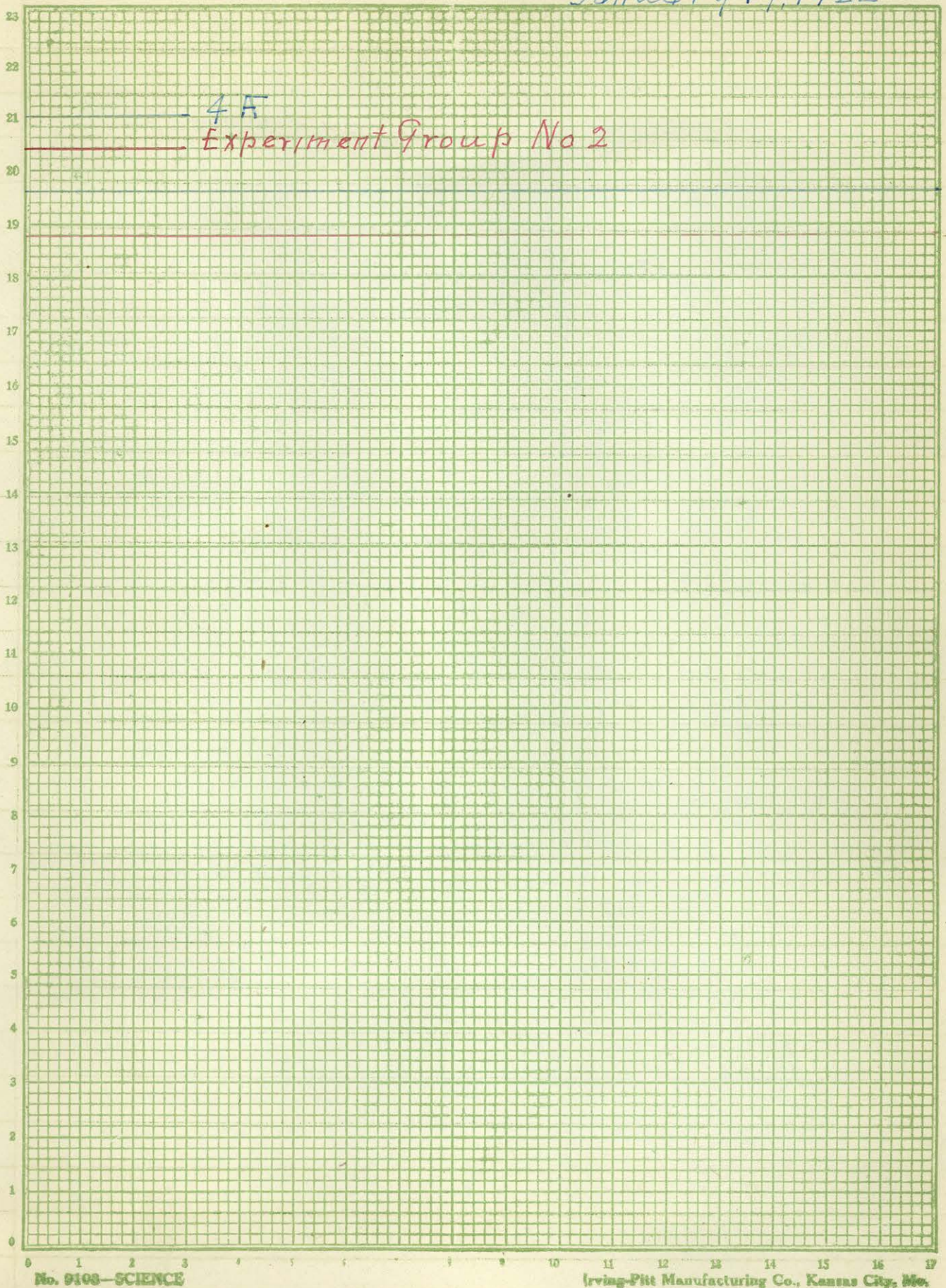
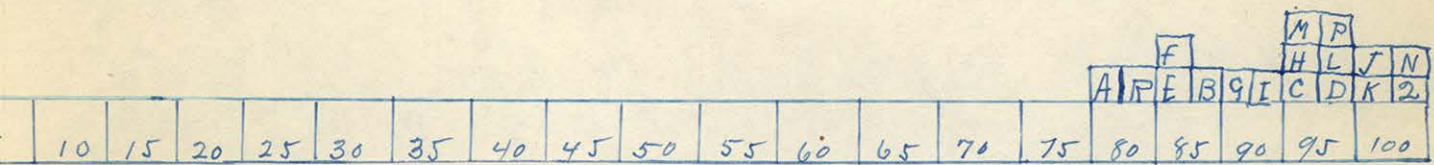


Figure III.

January 19, 1922.



Chapter IX.

Comparison of Oral and Written
Spelling.

The following day, another test was given, the object being to determine the difference in the spelling ability of pupils when the words to be spelled were used in sentences, and when the words were pronounced as an ordinary spelling lesson. In this test, twenty words were used, and they were taken from the same column as before, Column H. When the list of sentences containing the words to be spelled was prepared, the time to be allowed for writing each sentence was calculated in seconds, and the number placed before each sentence.

In giving this test, the writer used a stop watch, and when the time allowed for writing the sentence was up the next sentence was read, even if all the pupils had not finished writing the previous sentence.

The words used for the test were placed at or near the beginning of the sentence, and all words used in the sentences were within the thinking range of the pupils. After the test had been given, the pupils were told what word in each sentence had been given them as test words, and they were asked to underscore these words. Then they were required to mark each word, the spelling of which they were sure, with the letter "S"; the words they doubted, with the letter "D"; and the words they were positive were wrong, with the letter "W". They were scored on the correctness of their doubting, the same as on the correctness of the spelling.

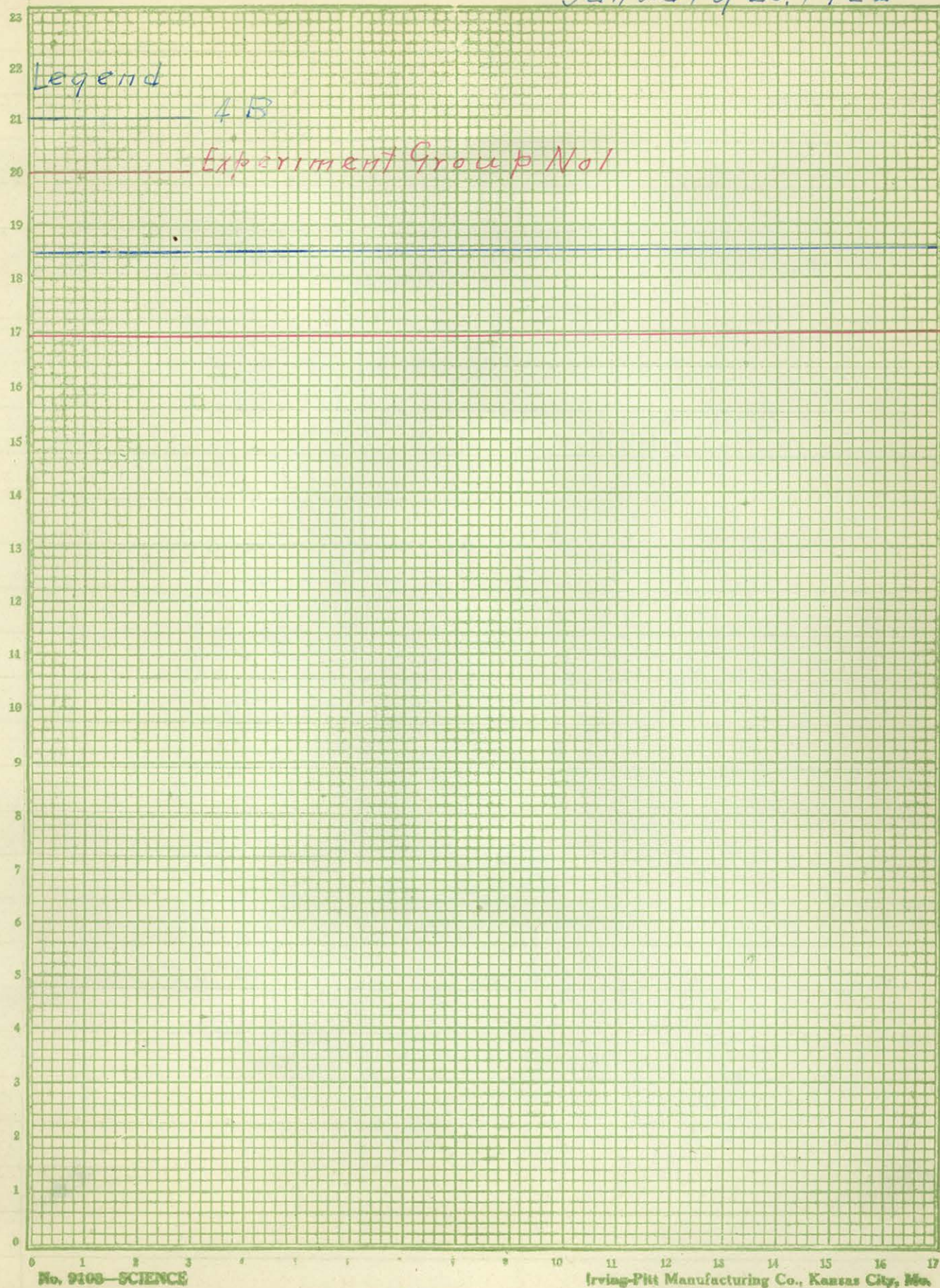
Graph IV. shows the standing of room Number 1, and the experiment group.

Graph V. shows the same for room Number 2.

A comparison of these graphs with Graphs Numbers II. and III., shows that the experiment group cannot spell as well when sentences are used as when the words are dictated

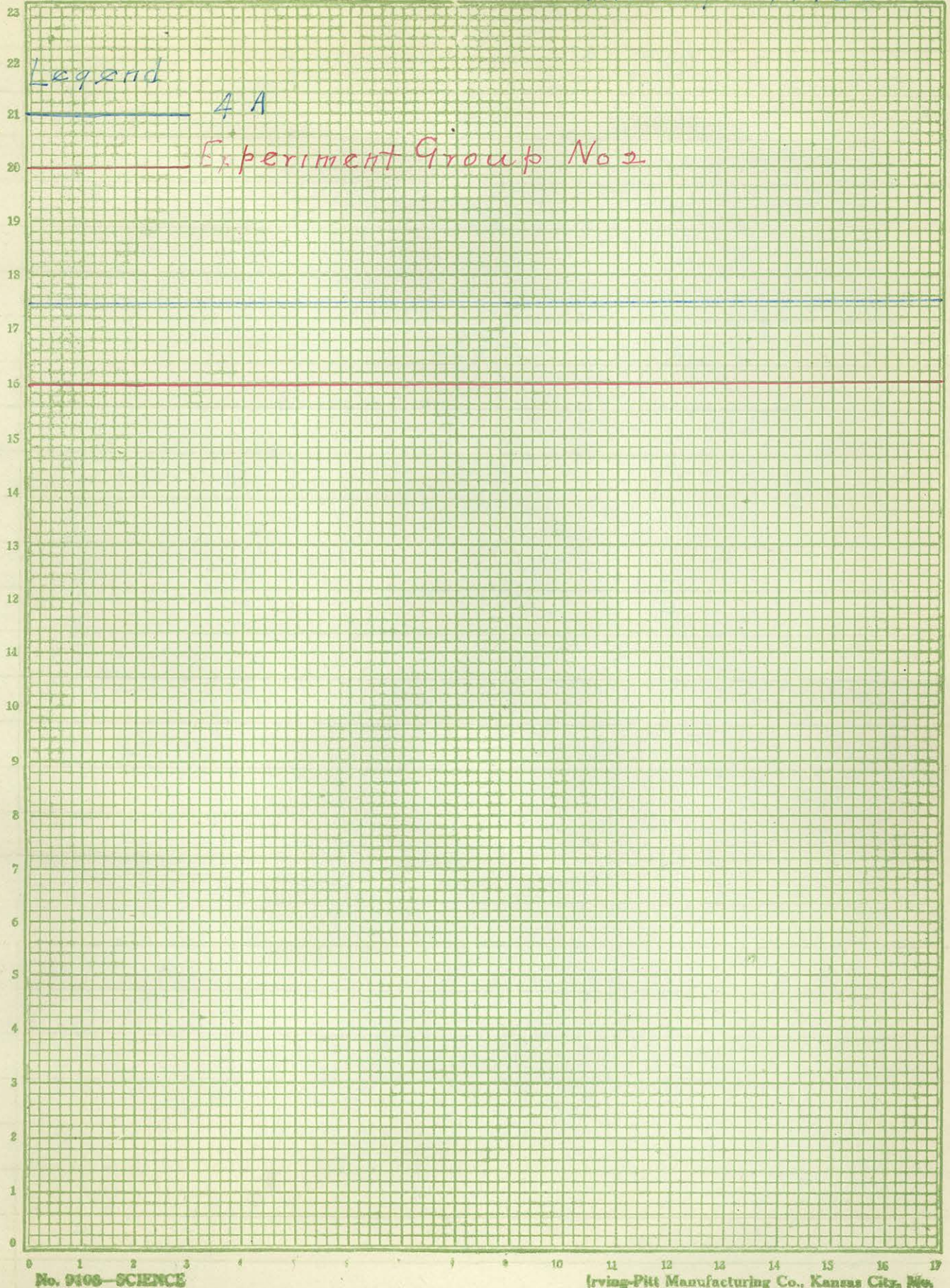
Graph No II

January 20, 1922



Graph No. V

January 20, 1922



separately. This was to be expected, because in this case, at least, the poor spellers are slow writers, and as they were given a definite time to write the sentences, they were obliged to write at a speed greater than their normal rate.

Chapter X.

The Mental Text.

At this time, the Otis mental test was given to the pupils of the experiment group. All instructions were carefully followed, and the test was given under very favorable circumstances.

The correlation was then found between the median of all the spelling^{tests} that had been given up to this time, and the mental test. For finding the correlation, the following formula was used:

$$r = \frac{6 \sum D^2}{N (N^2 - 1)}$$

The correlation was 82+, which in this case, shows that there is a very close correlation between mental tests and spelling ability.

Chapter XI.

The Lidyman Test.

On February 14th, the writer with the aid of an assistant, gave another spelling test in all the grades of the Moscow schools. The words used for this test were taken from Teacher's Leaflet Number 15, issued November, 1921, by the Department of the Interior, Bureau of Education, and entitled "Survey of Writing Vocabulary of Public School Children of Connecticut," by Willard F. Tidyman.

This list contains the one-thousand words of the Ayers list, and two thousand additional words.

Mr. Tidyman says, "The apparent need is for more extensive investigation in order that the words which are comparatively rare, those in the second and third thousand, can be determined.

A second serious limitation of previous investigation is the failure to report grade use. It is quite as important for successful teaching to know in what grades words are used, as to know what words children use in general."

The three thousand words of the Tidyman list were collected from compositions written by school children of grades three to eight inclusive. The words were not arranged in one list, but the ones most commonly used by children of the different grades were arranged in separate lists. From each of these lists, twenty words were taken at random. The words were not used in sentences.

Graphs Numbers VI. and VII. show the relative standing of the experiment groups and their respective grades.

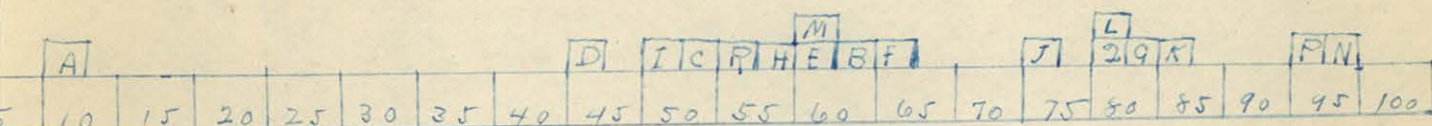
Figure IV. shows the standing of the individual pupils.

An examination of Figure IV. reveals the fact that pupil "A" made a grade of 10%. In the general test given in October, this pupil misspelled every word; on January 12, he made a grade of 35%; and on January 19, his grade was 83%.

The writer gave this pupil the Stanford Revision of the Binet-Simon mental test, and his I. Q. was found to be .63.

Figure IV.

February 14, 1922.



Graph No VII

February 14, 1922



Graph No III

February 14, 1922



--44--

Chapter XII.

Final Test.

As a final test for the experiment, the writer used the results of a test given in all the grades of the Moscow Schools from the 2nd to 8th inclusive. The test was given by a member of the class in Educational Tests and Measurements of the University of Idaho. Column "O" of the Ayers one-thousand word list was used. The test was given on the 14th of April, six and one-half months after the experiment was begun. The group under experiment made an average of 65, Room Number 1, 70%, and Room Number 2, 75%. In the first test given about the first of October, the experiment group made a score of $27\frac{1}{2}\%$, and the remainder of grade 4 B made a score of 35%.

Graph Number VIII. on the following page shows the progress made by the experiment group, and grade 4 B.

Graph No VIII

April 14, 1922

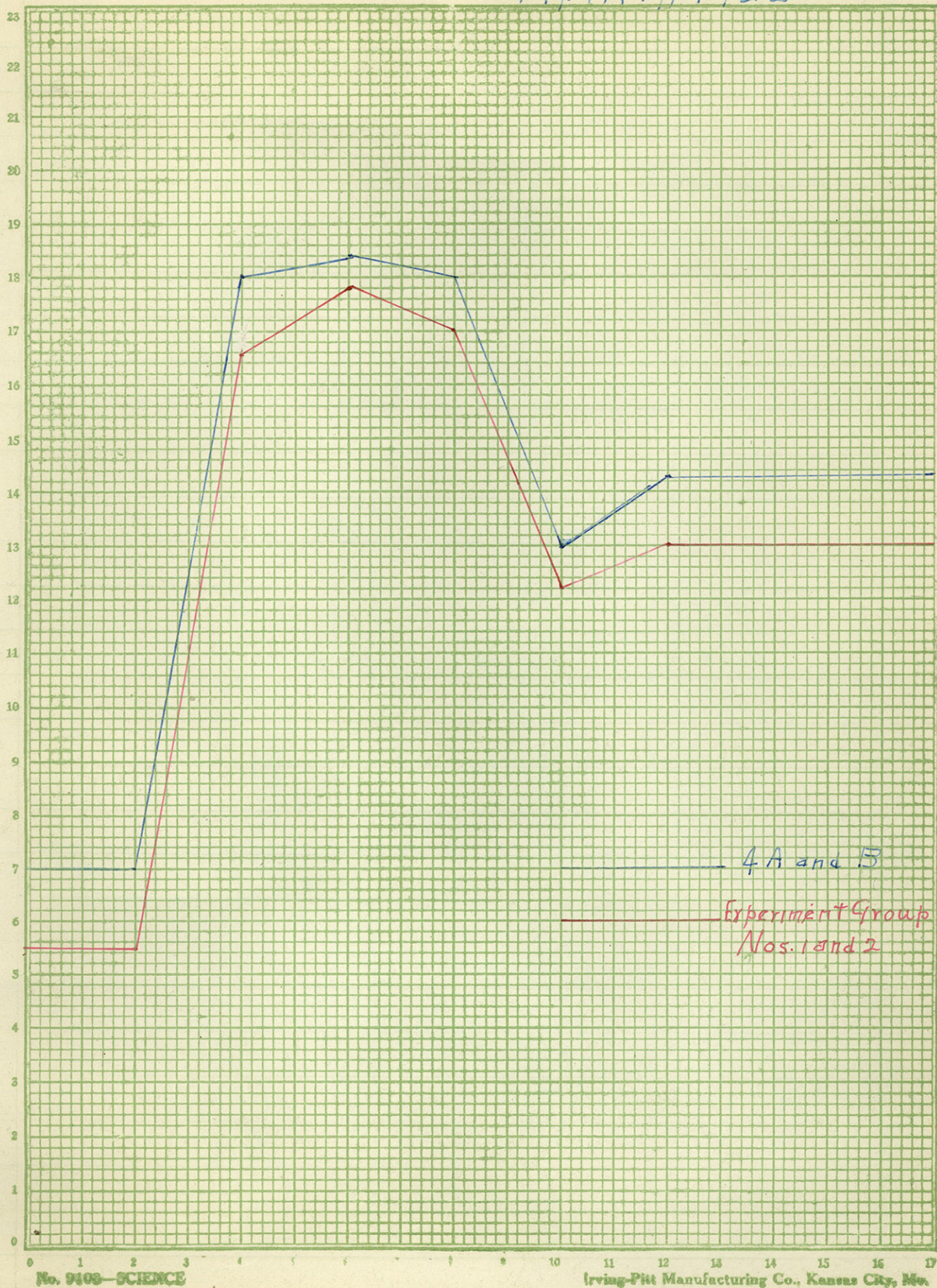
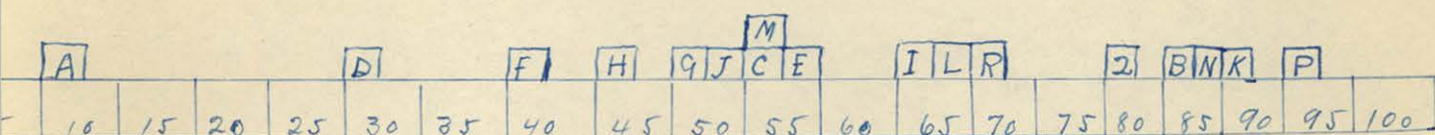


Figure V.

April 14, 1922.



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Chapter XIII.

Conclusions.

Conclusions.

It was stated at the beginning of this thesis, that the writer had three objects in view, viz: To discover the cause of poor spelling ability; To attempt to provide a remedy; And to carry on the remedial measures under regular school conditions.

It is the opinion of the writer that the causes may be classified under three general heads, mental, physical and social.

Pupil A has made no real progress in acquiring the ability to spell. As shown, both by the Otis group test and the Binet-Simon individual test, he has low mentality. Every device known to the writer was used, but the results show they were of no avail. He could spell no better at the end of the experiment than he could at the beginning. Some of the pupils had defective hearing and eyesight, caused, no doubt, by bad tonsils and adenoids. A few were given medical attention and there was a marked improvement in their work. Mispronunciation was another cause of poor spelling in this group, and this can be traced to the home surroundings and associates. The remedy lies in diagnosing each individual, and when the cause is located, to apply such means as will tend to remedy the defect.

Then when the causes have been definitely established and the remedies decided upon, the next step is to place the pupils in a group so that they may receive regular and systematic training, and the nearer ^{to} the training approaches the individual pupil, the more effective will be the results.

Chapter XIV.

Bibliography.

Bibliography.

1. Monroe, W. S., "Measuring the Results of Teaching."
2. Monroe, DeVass and Kelley, "Educational Tests and Measurements." Riverside Text Book in Education.
3. Rapeer, L. W., "Teaching Elementary School Subjects," Charles Scribners Sons.
4. Ayers, L. P., "Measurement of Ability in Spelling." Bulletin of the Division of Education, Russell Sage Foundation.
5. Otis, A. S., "The Reliability of Spelling Scales, in School and Society", Vol. 4, p. 753.
6. Thorndike, E. L., "Means of Measuring School Achievements in Spelling;" in Educational Administration and Supervision, Vol. 1, p. 306.
7. Courtis, S. A., "Teaching Spelling by Plays and Games" 82 Eliot Street, Detroit, Michigan.
8. Sears, J. B., "Spelling Efficiency in the Oakland Schools," Board of Education Bulletin, Oakland, California, p. 51.
9. Hollingsworth, Leta S., "The Psychology of Special Disability in Spelling", Teachers' College, Columbia University, Contribution to Education No. 88, p. 38.
10. Kallom, Arthur W., "Some Causes of Misspellings" in Journal of Educational Psychology Vol. 8, p. 395.

11. Freeman, F. N., "Psychology of the Common Branches,"
p. 115.
12. Cook and O'Shea, "The Child and his Spelling."
13. Zirbes, Laura, "Diagnostic Measurement as a Basis for
Procedure;" in Elementary School Journal, Vol. 18,
pp. 505-22.
14. Terman, L. M., "The Measurement of Intelligence,"
(Houghton Mifflin Company, Boston, Mass., 1916)
15. Ayers Spelling Scale, Russell Sage Foundation,
New York City.