

mile; and denies that the actual cost of movement of freight over the defendant's lines, or any of them, or between the points specified in the petition, or any of them, does not exceed one half of one cent per ton per mile. But to the contrary, this defendant avers that the actual cost of movement of freight over the lines and between the points specified in the complaint does largely exceed the amount specified in the petition and is greatly in excess thereof; and denies that the charges made and collected for the service specified in the petition are, in some cases, or is in any case, over nine times the amount of cost of movement, or is in no case less than three times the actual cost of movement.

Third—This defendant denies that the rates now established and charged by the defendants, or any of them, for the carriage over their lines of the various kinds of classes of freight from the Missouri River common points described in the petition, or any of them, to San Francisco, in the State of California, and Salt Lake City, in the Territory of Utah, constitute unjust discrimination, or a violation of section four of the act to regulate commerce, or at all; or give undue or unreasonable preference or advantage in favor of the merchants or dealers or shippers of San Francisco or of any of them, or of traffic transportation thereto, or give the merchants or dealers or shippers of Salt Lake City, or any of them, or of traffic transportation thereto, or subjects the trade or commerce of Salt Lake City, or persons or any person engaged therein, to undue or unreasonable prejudice or disadvantage, or in violation of the act to regulate commerce.

Fourth—This defendant denies that the rates now established and charged by the defendants, or any of them, for the transportation over their lines of the various kinds or classes of freight articles from the Missouri river common points, or any of them, described in the petition, to Salt Lake City, in the Territory of Utah, or San Francisco, in the State of California, produce or result in a greater compensation in the aggregate for transportation of like kinds of said freight articles under substantially similar circumstances and conditions for the shorter distance from said, or either of said, Missouri river common points to Salt Lake City, Utah, than for the longer distance over the same line in the same direction to San Francisco, California, the shorter being included in the longer distance; or that said rates are in violation of the provisions of the act to regulate commerce. But to the contrary, this defendant avers that the transportation from the Missouri River common points, specified in the petition, to Salt Lake City, Utah, is not made under substantially similar circumstances and conditioned with the transportation to San Francisco, California.

Fifth—This defendant denies that Salt Lake City is the largest or only important center of trade between Denver and San Francisco, and denies that the defendants, or any of them, charge excessive or unlawful rates for the transportation of various kinds of freight, or that same constitutes a violation of the act to regulate commerce.

Sixth—This defendant further swore that all its rates and all of its joint rates

in connection with the lines and roads of its co-defendants; are in all respects fair, reasonable and just and are in all things strictly in accord with the provisions of the act to regulate commerce; and as to all other averments in the petition not herein before denied or explained, this defendant, on account of its want of information and belief on the subject, denied the same and each thereof.

SOUTHERN PACIFIC COMPANY,
By J. C. STUBBS,
Third Vice-president.
CHARLES H. TWEED,
Attorney for Southern Pacific Company.

STATE OF CALIFORNIA,
City and County of San Francisco. } ss

Mr. J. C. Stubbs, being duly sworn, deposed and says that he is officer and agent, to wit, the Third vice-president, of the defendant, Southern Pacific Company, and makes this verification for and on behalf of said defendant, and that the matters set forth in the foregoing answer are true as well as he verily believes.

(Signed.) J. C. STUBBS.
Subscribed and sworn before me this 30th day of March, 1892.

E. B. RYAN,
Notary Public in and for the city and county of San Francisco, State of California.

MEMORY AND THE AGE.

[Boston Advertiser.]

Memory tests were made during 1891 on some 1500 pupils of this city in connection with the recent anthropological measurements taken under the direction of Dr. Franz Boas. The subjects of the tests included members of the grammar schools above the second grade, of the State Normal school and of the senior and second year classes at the High school. The method of making the tests was this in brief: A series of numbers, in which the digits did not stand in the accustomed order, no single digit being repeated, was read before each class to be tested.

Each class was tested on four separate occasions, in several instances where the purpose was to determine the effect of fatigue on the memory, the tests being made before and after school. After the reading the pupils wrote down the numbers as they recalled them. Twelve numbers constituted a single test; 3 of 5 digits; 3 of 6; 3 of 7; 3 of 8, in the lower grades. In the higher grades and in the High School the first three observations were made with numbers of six digits, and in the Normal School with seven. Different combinations were given at the different schools, but the tests were essentially uniform. After several trials pupils learned the number of digits to expect at each test, and gave their attention more to retaining the figures in their respective places.

Among the facts noted are these: Pupils 15 years and over do not remember six digits as well as pupils a year younger. Pupils of 10 years and under 11 fall below those of 9 and under 10. The memory span increases with age rather than with the growth of intelligence, as determined by the tests used for promoting pupils from one grade to another. The tests do not apply to the retentiveness of the memory;

they may be considered as a test of the power of concentrated attention and the time it can be kept up.

The results of the computations, based on the data collected, have been plotted on charts to graphically represent several points. The lines joining the points representing respective percentages of correctness in the tests are admirably summarized in eight conclusions. First—The memory span increases with age rather than with the growth of intelligence; experience is a better school than books. Second—The memory span measures the power of concentrated and prolonged attention. Third—Pupils unconsciously remember digits that they heard the day before when digits are read them a second time. Fourth—The tests do not show the effects of fatigue when made after a day's work, showing the work in the schools is not excessive. (5) Memory in ages passes through three stages in leaving the mind. (6) Ideas previously in the mind and associated forms of ideas are factors in causing a confusion of the memory image and its final loss. (7) There is an apparent tendency to overestimate the number of ideas presented to the mind when the number of ideas is slightly greater than the memory span, but the general rule is to underestimate the number. (8) Ideas, except the last of a series, are more lasting in inverse order as removal from the beginning of the series in which they occur.

A NEW MEXICAN COLONY.

J. H. Martineau writes us as follows from Camp on Bavispe river, Sonora, Mexico, under date March 14th: "We arrived today—a new colony planted in Mexico, and the first in the State of Sonora. We are located on the estate called Los Horcones (The Forks), lately bought from Col. Emilio Kosteritzky, commanding in northern Sonora, who has charge of public lands in connection with Gen. Juan Ferrocchio of Hermosillo. Los Horcones comprises twenty-four and a half sitios of farm and pasture land and two sitios of timber, twenty-six and a half in all—equal to 117,342 acres, for which we pay \$85,000. We buy this land individually, and have nearly four years in which to pay for it. Our beautiful townsite we have named Ferrocchio (with the accent on second syllable) in honor of Gen. Ferrocchio, a firm friend to our people. The leading men of Sonora have been desirous of having our people in their State to help build it up, knowing our reputation for industry and thrift, and in this the common people share fully. "Now," say the latter, "we will have mills and machinery and good roads, and someone to show us how to get along."

Our journey across the Sierra Madria mountains has been tedious—a full month—for we had to make a road as we went along, there being none ever constructed across the mountains between Sonora and Chihuahua, and only one very difficult burro trail. It has been said a road across the range would cost an immense sum, and yet our little party of twenty-two men and boys undertook the task and have brought our fourteen loaded wagons and families of women and children