SCIENCE:

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NOTICE TO SUBSCRIBERS.

We consider it due to those subscribers who have favored us with their subscriptions, previous to the publication of our club rates, that they should have the privileges of the list. They can therefore send us subscriptions for any or all of the publications named at the reduced double rates, less $4, the subscription price of "SCIENCE."

Since the publication of the club rates last week, we have received rates from the proprietor of *The American Journal of Science and Arts*, the terms of which are $6 a year. The club rate with SCIENCE will be $8.50 per annum.

THE Report of the United States Commissioner of Education, for the year 1878, has just reached us, and as but twenty days intervenes before 1881 will make its debut, the first impression on opening the volume is that it is already somewhat out of date. We believe that the cause of delay in printing this and other reports is attributable to the slow action of Congress in making the appropriations for printing, and we trust that in future the Commissioner may have facilities for publishing his report at an earlier date, as both its value and interest are much diminished by its being circulated two years after the facts recorded have transpired.

Thus, the first line of the report lamenting the existence of the financial depression, is read with impatience in these booming times. We congratulate the Commissioner on the fact that "the assault on the bulwarks of society, by ignorant, unfortunate or unprincipled persons," has not been so destructive as was anticipated. Society at least survives, notwithstanding the action of those "who would modify our present freedom of conscience, and of those who would establish a distinction of classes with a view to a permanent aristrocracy, or practice some form of destructive communism." These gloomy political forebodings, which hardly appear to come within the range of Educational Statistics (in the absence of the catastrophy indicated), may now be read without alarm, and we feel tempted to suggest the propriety of publishing official prophetic utterances, while anticipations may yet "lend enchantment to the view."

The Commissioner of Education makes a strong appeal to public opinion, that Congress may be influenced to place more adequate means at his disposal to carry out the duties of his office. "Called upon by thoughtful educators in anticipation of perils, from which it was hoped he might afford relief or safety, and in the midst of ignorance on the one hand and indifference or opposition on the other," he complains that he is not furnished with either the quarters, the assistants, or the money necessary to do the work required.

To enable the Bureau of Education to perform its national functions satisfactorily, without the co-operation of volunteer aid, which has in the past enabled it to accumulate information, the Commissioner wishes Congress to comply with six requests, which he makes in the following order: *First*, a sufficent force of competent and trained men and women; *Second*, proper quarters; *Third*, a library having everything printed on the subject of education; *Fourth*, a collection of educational appliances, the character of which is described; *Fifth*, appropriate means of receiving and collecting information in regard to educational systems, institutions and methods; *Sixth*, means to arrange all this information, publish it, or communicate it to the educators of the country.

We fear the Commissioner has somewhat weakened his case by showing his ability to present so ample a report with the means already at his command, but we trust that any substantial aid that he really stands in need of will not be withheld. The concessions he calls for appear quite reasonable and essential to his office, and his success in obtaining them will probably be controlled by his ability to prove that such is the case.

This Journal, representing one of the highest branches of education, naturally desires that a National Bureau, for collecting educational statistics, should be properly supported by the nation, so that no lack of means at the command of the Commissioner should justify an inadequate administration of the office.

We have made a few selections from this report, chiefly relating to scientific schools, and a few facts that appear of special interest. These will be found in another column.

THE EPSOM MINERAL WATER OF MISSOURI.

BY PROF. CHAS. E. WAIT.

A shallow well recently sunk within three miles of this place yields a mineral water which promises to be a valuable addition to the list of saline purgatives. A sample of this water was taken

October 23, and was examined, with the following interesting results:

ANALYSIS.

Temperature.... = 58° F.

Specific Gravity, = 1.006819.

SOLIDS.	GRAINS PER GALLON.
Sodic Carbonate	4.160
Calcic Carbonate	23.616
Magnesic Carbonate	.569
Ferrous Carb nate	.081
Sodic Chloride	27.312
Sodic Sulphate	4.844
Potassic Sulphate	9.730
Calcic Sulphate	67.231
Baric Sulphate	trace.
Magnesic Sulphate	264.505
Aluminic Oxide	.034
Ammonia	trace.
Silicic Oxide	.038
Organic Matters	1.178
	403.298

GASES.	CUBIC INCHES PER GALLON.
Carbonic Anhydride	23.178
Nitrogen	4.330
Oxygen	1.493
Hydrogen Sulphide	trace.
	29.001

Not enough thus far is known of the water to enable me to present any reliable data concerning its therapeutic value; but physicians here and elsewhere, who have tried it, pronounce it an exceedingly valuable water.

MISSOURI SCHOOL OF MINES,
ROLLA, *November* 26, 1880.

THE ANTHROPOLOGICAL SOCIETY.

The Anthropological Society, of Washington, met on Tuesday evening, December 7, in the Smithsonian Institution, Professor Otis T. Mason in the chair. The following papers were announced: "Superstitions," by Mr. A. S. Gatschet, and "Savage and Civilized Orthoepy," by Professor Lester F. Ward. Mr. Gatschet, after giving the definitions of different authors and finding them too narrow, ascribed to superstition the following meaning: A belief in a physical power operating either within or without us, acting miraculously to affect our bodies or our minds, and which can be influenced to grant our requests. The word is derived from *super stare*, to survive. There are two kinds of superstition, the religious, relating to the world of spirits, and that of the physical nature, relating to all the phenomena of sense. It is hard to draw the line where religion ends and superstition begins, but the latter most generally represents the forces of nature as deified or anthropomorphic. The existence of superstition is manifested in names of gods, those of the American gods representing the sun, moon, and forces of nature.

Symbolism plays an important part in this connection, as well as the cultus of dreams, augurytaboo, omens and prognostics; such as cheiromancy and fortune-telling, hunting and fishing signs, witchcraft, medical jetishes, meteoric showers, comets, amulitism, etc.

The causes of superstition are mental inertia and ignorance of the real causes of things, coupled with the insatiable desire to account for phenomena. Isolation is also a very fruitful source of these beliefs. They are valuable to us only when we can trace their origin; then they lead to a knowledge of savage psychology, and are of very great use. The author of the paper illustrated the various points taken up by many myths and superstitions from our Indians and other sources.

Mr. Gatschet, having spent several years in personal contact with the aboriginal mind, is very competent to form an opinion as to the rationale of our Indian superstitions.

Dr. Morgan took the ground that superstition is natural to our race, having found in his practice that few of his patients were free from it.

Mr. Mason drew attention to the worthlessness of these innumerable stories unless they are brought together in classes, so that out of them some clue may be found to their origin. Every intelligent mortal passes his life between two worlds, the known and the unknown. Between these two is a border land, where superstition dwells. Its inhabitants are different for different individuals or tribes, and vary with our growing years. For Mr. Haeckel it is peopled with atom-souls, and, for the savage, with the concrete souls of things.

NEW YORK ACADEMY OF SCIENCES.

THE MAN OF THE CAVES.

BY PROFESSOR W. BOYD DAWKINS, F.R.S., Owens College, England.*

The questions which we have to put to ourselves are these: At what time in the geological history of the earth did man appear? and what manner of man was he? The answers to these questions are to be found in the recent discoveries, in the deposits of ancient rivers, and in the accumulations in caverns, which have been explored in the Old World during the last 60 years. Inquiry into the antiquity of man falls within well defined limits in point of time. Since there were no living species of the higher mammalia in the earlier stages of the tertiary period, the Eocene and the Miocene, it is hopeless to look for a highly specialized being such as man, nor in the succeeding Pliocene is it likely that he will be discovered, since but very few of the living, higher mammalian forms were then on the earth. When we examine the next stage, or Pleistocene, a period characterized by the presence of numerous living mammalia in both the New and Old Worlds, the field is fairly opened before us for our inquiry. The conditions of life at that time were precisely those in which man would be expected to exist, and it will be my object to put before you the evidence as to the earliest man of which we have any certain knowledge.

In the Pleistocene period the physical conditions of Europe were wholly unlike those which it now presents. The sea-board of the Atlantic reached to the 100-fathom line, or 100 miles to the west of the coast of Ireland. The British Isles formed a part of the Continent of Europe, and the area of the North Sea formed a shallow valley, abounding in mammalia of various kinds. The Mediterranean Sea also was much smaller than it is now, a land barrier extending North into Spain by the way of Gibraltar, and another passing in the direction of Malta, Sicily, and Italy, while what is now the bed of the Adriatic Sea was dry land, and most of the islands in the Ægean Sea were the tops of ranges of hills overlooking rich and fertile valleys. The living mammals appearing on this tract of land consisted of Southern species—the hippopotamus, spotted hyena and others—which ranged as far north as Yorkshire.

A second division is composed of the Northern animals, such as the reindeer, the musk sheep, and the like, which ranged as far to the South as the Alps and the Pyrenees, while yet a third division, such as the stag, bison, and horse, ranged over nearly the whole of Middle and Southern Europe. The remains of these animals, lying side by side with extinct species, such as the mammoth and the woolly rhinoceros, characterise the Pleistocene deposits of Europe. There were great climatal changes in Europe during the Pleistocene age. The temperature gradually lowered, and in the North large masses of ice spread over certain regions. When the temperature was lowest the Northern animals advanced furthest to the South, and when the temperature was warmest the Southern animals advanced furthest to the North, and from the intimate association of their remains in ancient river deposits and in caves may be inferred that the Winters were very cold and the Summers very warm

* Lecture delivered before the Academy, December 6, 1880.