the geological features of the state, has been prepared by Dr. J. Kost. Florida has never been a very promising geological field, the rocks being effectually concealed almost everywhere over its level surface by extensive quaternary and recent deposits; while the facilities for geological observation afforded by artificial excavation and river and coast erosion are very meagre. Enough facts, however, have already been determined to show that Florida can no longer be regarded as simply a long stretch of sand deposited on a series of coral reefs. Every member of the tertiary series has been identified in the state, and the lowest division or eocene, especially, is of considerable extent and thickness. A low anticlinal axis runs down the peninsula midway between the east and west coasts. This uplift appears to have occurred at the close of the eocene, since the later rocks differ in character on the two sides of the ridge. Those of the east side are chiefly the coquina or shell limestone; while those of the west side are coralline and shelly limestone, and sandstone, with much siliceous material. In most parts of the state, all the formations, and especially those newer than the eocene, are often exceedingly cavernous; branching channels, with running streams into which numerous sink-holes descend from the surface, constituting an extensive system of subterranean drainage. In numerous instances these subterranean streams reach the surface at lower levels, forming springs of great size and force. Under the head of geological principles, the physical and geographical features of the state in the successive epochs, and the sources of the different kinds of sediment, are discussed at some length. The sandy and seemingly barren soil of Florida is shown, by statements concerning its composition and agricultural products, to possess virtues not suspected by the casual observer. Not only is the soil much better than it has been represented, but it is shown that the state is not lacking in materials for improving it to any desired extent. Shell marl is abundant in all parts of the state, and the discovery of important phosphate deposits similar to those of South Carolina is announced. Aside from the marls and phosphates, the mineral resources of Florida are very limited, including, however, some building-stones and clay-beds, and indications of lignite and iron ore.

MR. AND MRS. E. W. MORSE, pioneer members of the San Diego society of natural history, have recently presented that association with a lot near the post-office, valued at over twelve thousand dollars. By the conditions of the gift, the society will erect a building.

RELATION OF THE STATE TO INDUSTRIAL ACTION.

PROFESSOR ADAMS has given us a pamphlet that is not only critical but constructive, and it is the ablest monograph that the Economic association has yet issued. It is not altogether new, for its substance was read some time ago as a paper before the Constitution club of New York City, and published by the club with the title "Principles that should control the interference of the state in industries." In its present form, however, the argument is both revised and extended.

The author's plan of procedure is simple and suggestive. He first takes up the *laissez-faire* theory, analyzes it, and finds it inadequate as a guide in constructive economics, and then develops his own principles for the regulation and limitation of state interference. Professor Adams finds himself unable to follow Mill's dictum that every departure from *laissez-faire*, unless required by some great good, is a certain evil. He finds the presumption against state activity an insufficient principle upon which to base constructive efforts. He, moreover, regards the modification of the English system of economics for which Professor Cairnes is largely responsible as no improvement. "In its original form, it [English economics] was conclusive as as argument though based upon an erroneous premise; in its modernized form the error of its premise has been corrected, but its conclusiveness as an argument has thereby been destroyed" (p. 25). As modified, the doctrine of *laissez-faire* cannot lay claim to scientific pretension, and amounts to nothing more than a declaration in favor of the wisdom of conservatism.

In seeking to replace this now discarded principle, Professor Adams finds some obstacles, owing to the general failure to distinguish clearly between *laissez-faire* as a dogma and free competition as a principle. "The former is a rule or maxim intended for the guidance of public administration; the latter is a convenient expression for bringing to mind certain conditions of industrial society" (p. 32). Over against the prevailing English maxim with its presumption in favor of the individual, on the one hand, and against the prevailing German maxim with its presumption in favor of the state, on the other, the author brings forward this principle, distinct from both, as the starting-point for constructive study: "It should be the purpose of all laws touching matters of business, to maintain the beneficent results of competitive action while guarding society from

Relation of the state to industrial action. By HENRY C. ADAMS. Baltimore, American economic association. 8°.

the evil consequences of unrestrained competition" (p. 35).

Unrestrained competition, Professor Adams argues, results in important evils of three sorts. First, it tends to bring the moral sentiment pervading any trade down to the level of that which characterizes the worst man who can maintain himself in it. Secondly, it renders it impossible for men to realize the benefits that arise, in certain lines of business, from organization in the form of a monopoly. Thirdly, the policy of restricting public powers within the narrowest possible limits tends to render government weak and inefficient; and a weak government, placed in the midst of a society controlled by the commercial spirit, will quickly become a corrupt government. In these three important respects *laissez-faire* fails. Therefore the principles for state interference which Professor Adams lays down are three, one corresponding to each of the above evils: 1°. The state may determine the plane of competitive action; 2°. The state may realize for society the benefits of monopoly; 3°. Social harmony may be restored by extending the duties of the state.

To use the author's own language, "This essay may be regarded as a plea for the old principle of personal responsibility as adequate to the solution of all social, political, and industrial questions; but it is at the same time urged that this principle must be accepted fearlessly, and applied without reserve. . . . [Monopolies], it is claimed, should be controlled by state authority, and it is suggested that the American theory of political liberty will lead men to rely as far as possible upon the efficiency of local governments in the exercise of such authority" (pp. 84, 85).

In some particulars we find ourselves obliged to differ with the author, both as to principles and as to applications; but his argument is clear and straightforward, and we bear cheerful testimony to its ability and its candor.

GRASSES OF NORTH AMERICA.

IT has sometimes been urged, as an argument against the establishment of agricultural schools, that there were no adequate text-books in which the student might find, systematically arranged and classified, the knowledge of agricultural matters acquired by the farmer on the one hand, and the student on the other. There has been, too, a sufficiently large grain of truth in the accusation to cause us to welcome such additions to agricultural literature as Storer's 'Agriculture,' recently noticed in these columns, and Beal's 'Grasses of North America.' Both these books, in quite different ways and in quite distinct fields, go far to fill what were serious gaps, and the future student of agriculture will owe both authors a debt of thanks.

Grasses of North America, for farmers and students. By W. J. BEAL. Vol. i. Lansing, Thorp & Godfrey, pr. 8°.

Although written by a botanist, and informed throughout by botanical knowledge, 'The grasses of North America' is a book for the farmer rather than for the botanist. The chapters upon the structure, form, and development of the grasses, the power of motion in plants, plant growth, and on classification, while containing much valuable matter, are really preliminary to the succeeding chapters upon more immediately practical topics.

In these the author has collected the results and opinions of the leading authorities of this and other countries, and added much valuable original matter upon such topics as the adaptation of the various cultivated grasses to different purposes and different conditions of climate and culture, the preparation of the soil, the care of grasslands, making hay, etc. A chapter upon the insect enemies of grasses and clover, by Prof. H. J. Cook of the Michigan agricultural college, and one on the fungi of forage-plants, by Prof. William Trelease of the Shaw school of botany, St. Louis, conclude the book, which deserves a wide circulation among the farmers and students for whom its title designs it. It should be added that the abundance of excellent illustrations greatly adds to the value of the book. A second volume is in preparation, to contain the description of all known grasses of North America, with full notes on their value for cultivation.

THE initial publication of the Henry Draper memorial is issued by Professor Pickering as the 'First annual report of the photographic study of stellar spectra, conducted at the Harvard college observatory.' With the Draper 11-inch photographic telescope, spectra have been obtained which we believe have not been equalled elsewhere; and Mrs. Draper has decided to send to Cambridge a 28-inch reflector and its mounting, and a 15-inch mirror, with which Dr. Draper's photographs of the moon were taken. But, what is more important, Mrs. Draper has not only provided the means for keeping these instruments actively employed, some of them during the whole of every clear night, but also of reducing the results by a considerable force of computers, and of publishing them in a suitable form.

— The tenth annual meeting of the American society of microscopists will be held in Pittsburgh, Penn., commencing Tuesday, Aug. 30. Prof. W. A. Rogers, Waterville, Me., is the president; and D. S. Kellicott, Buffalo, N.Y., secretary.