orological reports and weather-maps,' published in 1871, to aid in popularizing the work of the signal-service, is not sufficiently detailed, and has never had a great circulation. Another edition of it, with additional illustration and mention of the many facts discovered by studies of the ten years of signal-service observations, is now much needed; for we have no book in this country occupying the place held in England by the excellent little volume on 'Weather-charts and storm-warnings,' prepared by Mr. Scott of the British meteorological office. An attempt in this direction has, however, recently been made by Mr. S. S. Bassler of the Cincinnati *Commercial gazette*, who aims to make "a practical guide to weather-changes, and a help to a better understanding of the weather reports and predictions daily issued," with especial adaptation to the Ohio valley. The ordinary sequence of atmospheric conditions accompanying barometric maxima and minima is briefly described and roughly illustrated; but we regret to find in the field of popular instruction, where conciseness, clearness, and accuracy are of prime importance, so many departures from these essentials. Error and inaccuracy of statement, as well as the omission of many important facts, for which ample space might be found by avoiding needless repetitions, indicate lack of acquaintance with the subject; and although the preface says that "it is not proposed to consider any of the conflicting scientific theories, many of them still mere assumptions that have been accepted as explaining the phenomena daily presented in our atmosphere," we find on p. 36 the following obscure and inaccurate statement concerning the origin of storms: —

"The warm, light, vaporized air may move high over the land, frequently over strata of dry cool air, in great volume, from the central meteorological zone, gradually sinking down and forming the germs of barometric fields of low pressure, which spread and develop into extensive storm areas. It is in such fields that the heat of the sun is concentrated and storm centres originated. The earth absorbing electricity from the air, electric disturbances of more or less violence, according to the intensity of the condition, are experienced. The absorption or withdrawal of electricity from the vaporized air produces sudden condensation, excessive precipitation, and change of temperature."

It is said farther on, that the tornado "has its origin in the enormous electric tension caused by the friction of opposing atmospheric currents of different temperature; and electricity is undoubtedly the active agent producing the appalling effects of tornadoes." Some physical demonstration of this very popular and very erroneous assumption would not be out of place after so unqualified an assertion. The pamphlet is better than nothing, but it is by no means a satisfactory piece of work.

ART-CATALOGUE OF THE NEW-ENGLAND MANUFACTURERS' INSTITUTE.

Catalogue of the art department of the New-England manufacturers' and mechanics' institute. Boston, *Cupples, Upham, & Co.*, 1883. 4°.

THIS catalogue certainly has a very alluring exterior, and leaves little to be desired in its general presentation of reproductions of certain sketches and pictures which were exhibited at the fair of 1883 in Boston. It is not our function to criticise the pictures, but the methods of reproducing the pictures and sketches by the various mechanical processes exhibited in the catalogue fall within the province of *Science*.

Still, a critic of the various methods of reproduction of pictures cannot limit himself entirely to a mere consideration of the thoroughness of the technical processes involved in such reproductions; for he would appeal only to the ardent follower of the albertype process, or to an etching process. He must decide as impartially as possible, which of the various methods exhibited, for instance, in this catalogue, gives an idea of the pictures which appeals to the artistic sense in the fullest way. From this point of view there is no doubt that the wood-engravings and the etchings in this catalogue are superior to the specimens of the albertypes, and to those of the photographic processes in general. No photolithographic process represents the values of the lights and shades of a picture except in the most solid and implacable manner. Witness the 'View on the Nile,' which represents a darbeah in the foreground, with some figures on the river-bank near it, a stretch of river and of low-lying hills. The reproduction has an air of *vraisemblance*, but nothing more. It is not artistic. The little picture entitled 'Give me a swing,' representing a pretty little girl leaning against a tree near a hammock, and coquettishly entreating some passer-by, is a better specimen of what an albertype can do. The remaining specimens of albertypes lose whatever clearness of definition a real photograph might possess, and render the blackness of shadow of many photographs in a still more pronounced way; so that the albertypes presented in this volume have the appearance of poor photographs. There are certain subjects, however, for the reproduction of which the albertype is suitable.

'The spring near Orange, N.J.,' for instance, renders the peculiar mistiness and indefiniteness of a New Jersey landscape at that time of the year with considerable truth. The fascination of a new process of reproduction makes one eager to extend it to all subjects; and it is only after a long period of comparison that one can get far enough away from this fascination to obtain clear judgment of the possibilities of the method. He who discovers for himself the possibilities of a pot of red paint in decorative art is at first apt to apply the paint to every thing.

The wood-engraver and the etcher have nothing to fear at present from the various lithographic and photolithographic processes, save in the cheap market. The various gelatine processes must necessarily intensify the want of half-lights which is a characteristic of many photographs, and must obliterate even the faint differences in the degree of darkness of shadows which the original photograph may show.

Heliotypes and similar processes stand in the same relation to the pictures they reproduce that music-boxes stand to the performance by the musician of the piece of music they strive to reproduce. The delicacy and freedom of the original performance is lost. This cannot be said of wood-engraving and etching. The wood-engravings and etchings in this catalogue are superior to the other methods of reproduction, and show a capacity for interpreting the sentiment and the skill of the artist, even to the extent, sometimes, of improving on the originals of which they are the reproductions. The progress of one's art-culture is generally from photographs to engravings, and from engravings to etchings; and a half-hour's study of this illustrated catalogue would hasten one's culture in this generally accepted way.

YARROW'S CHECK-LIST OF AMERICAN REPTILES.

Check-list of North-American Reptilia and Batrachia; with catalogue of specimens in U. S. national museum. By H. C. YARROW, M.D. Washington, *Government*, 1883. (Bull. U.S. nat. mus., 24.) 8 + 249 p. 8°.

IN this catalogue are included the names of three hundred and thirty-seven species and sub-species of reptiles, and one hundred and thirty batrachians, found in North America north of Cape San Lucas and Key West. The trinomial system of expressing the variations of widely distributed and variable species is adopted, as in the recent check-lists of birds; and the sub-species are numbered with the species. Each species and sub-species has been furnished with an 'English' name, although very few of them have any distinctive vernacular appellation in fact. The author observes, that to the task of ascertaining the English names in actual use has been added "the very laborious one of translating as literally as possible some of the polysyllable Greek and Latin names." This, it seems to us, has been a wholly profitless task. It is no gain to any one to call Amblystoma jeffersonianum platineum the 'slender salamander,' while the related Batrachoseps attenuatus is the 'slender lizard.' Nor is it evident why most, but not all, of the species of Plethodon, are called 'lizards,' while those of related genera are chiefly 'tritons' or 'salamanders.' Hemidactylium scutatum, although in no proper sense a lizard, and not scaly, is called the 'scaly lizard,' instead of the 'shielded little half-toe,' as its name would imply. Perhaps these English names of Dr. Yarrow are as good as any other set of made-up vernacular names; but, if so, it is time to protest against the whole business. Scientific names themselves are sufficiently trying without this additional incubus.

The classification and nomenclature of Dr. Yarrow's list is essentially that of the check-list of Professor Cope. Several additions have been made, and a few changes of name; most of the latter being in the group of turtles, and due to the studies of Mr. F. W. True. Some further changes in nomenclature must take place; as the substitution (already suggested by M. Boulenger) of 'Cryptobranchus' for 'Menopoma,' of 'Necturus maculatus' for 'N. lateralis,' and the suppression of the generic name 'Muraenopsis,' pre-occupied among the eels.

After the check-list, follows a list of the specimens of each species in the National museum. This list is of very high importance as a contribution to our exact knowledge of the geographical distribution of species, and is, in fact, the *raison d'être* of the whole memoir. The bulletin is completed with a list of species desired by the museum, and with full index to scientific and vernacular names of species, and to the localities and names of persons mentioned.