

having taken an unjustifiable step. We are disposed to believe that these papers must have been among those whose activity was curtailed at the meeting in question. One of them, for example, naïvely inquires whether it is "a worse crime to exhibit and explain a book at an educational gathering than to show the use of a plow at an agricultural fair." We would point out that this analogy is fallacious. The end and aim of an agricultural fair is to see and examine all the new agricultural implements and products, and the demonstration of the virtues of a certain plow is precisely what the spectators have come to see. An educational gathering, on the contrary, is not called together once a year, or once in six months, to examine and compare books and papers, but to study and discuss, under the guidance and leadership of appointed speakers, questions pertaining to the theory and practice of the teacher's profession. If an exhibit of text-books and school-journals can be arranged so as not to interfere with the proper carrying out of the object of the meeting, let it be done. Such an exhibit can do little harm, and may do much good. But the representatives of publishing houses do not always stop here. They make themselves a good deal of a nuisance, and interfere with the work of the association. We fancy that it was this feature of the exhibit that was objected to in Massachusetts, and we heartily commend those in charge of the arrangements for the meeting, for putting a stop to it.

LEFT-HANDEDNESS. — A HINT FOR EDUCATORS.

DR. DANIEL WILSON, president of the Royal society of Canada, has lately contributed a paper to the Proceedings of that society on the subject of left-handedness, to which he has managed to give an unexpected and very practical interest, affecting all who have children or who are concerned in their education. The author had written previously on this subject, but not with such full and effective treatment. He reviews the various causes to which the general preference of the right hand has been ascribed, and also those to which the occasional cases of left-handedness are attributed, and finds them mostly unsatisfactory. He shows clearly that the preferential use of the right hand is not to be ascribed entirely to early training. On the contrary, in many instances, where parents have tied up the left hand of a child to overcome the persistent preference for its use, the attempt has proved futile. He concludes

that the general practice is probably due to the superior development of the left lobe of the brain, which, as is well known, is connected with the right side of the body. This view, as he shows, was originally suggested by the eminent anatomist, Professor Gratiolet. The author adopts and maintains it with much force, and adds the correlative view that "left-handedness is due to an exceptional development of the right hemisphere of the brain."

A careful review of the evidence gives strong reason for believing that what is now the cause of the preference for the right hand was originally an effect. Neither the apes nor any others of the lower animals show a similar inclination for the special use of the right limbs. It is a purely human attribute, and probably arose gradually from the use, by the earliest races of men, of the right arm in fighting, while the left arm was reserved to cover the left side of the body, where wounds, as their experience showed, were most dangerous. Those who neglected this precaution would be most likely to be killed; and hence, in the lapse of time, the natural survival would make the human race, in general, 'right-handed,' with occasional reversions, of course, by 'atavism,' to the left-handed, or, more properly, the ambi-dextrous condition. The more frequent and energetic use of the right limbs would, of course, react upon the brain, and bring about the excessive development of the left lobe, such as now generally obtains.

The conclusions from this course of reasoning are very important. Through the effect of the irregular and abnormal development which has descended to us from our bellicose ancestors, one lobe of our brains and one side of our bodies are left in a neglected and weakened condition. The evidence which Dr. Wilson produces of the injury resulting from this cause is very striking. In the majority of cases the defect, though it cannot be wholly overcome, may be in great part cured by early training, which will strengthen at once both the body and the mind. "Whenever," he writes, "the early and persistent cultivation of the full use of both hands has been accomplished, the result is greater efficiency, without any corresponding awkwardness or defect. In certain arts and professions, both hands are necessarily called into play. The skilful surgeon finds an enormous advantage in being able to transfer his instrument from one hand to the other. The dentist has to multiply instruments to make up for the lack of such acquired power. The fencer who can transfer his weapon to the left hand, places his adversary at a disadvantage. The lumberer finds it indispensable, in the opera-

tions of his woodcraft, to learn to chop timber right and left handed; and the carpenter may be frequently seen using the saw and hammer in either hand, and thereby not only resting his arm, but greatly facilitating his work. In all the fine arts the mastery of both hands is advantageous. The sculptor, the carver, the draughtsman, the engraver and cameo-cutter, each has recourse at times to the left hand for special manipulative dexterity; the pianist depends little less on the left hand than on the right; and as for the organist, with the numerous pedals and stops of the modern grand organ, a quadrumanous musician would still find reason to envy the ampler scope which a Briareus could command." That all this is true is abundantly shown by the numerous examples cited by the author, — from the greatest of artists, the left-handed Lionardo da Vinci, to the distinguished ex-president of the American scientific association, Prof. Edward F. Morse, and (we may add) to Dr. Wilson himself, both of whom are known to be accomplished draughtsmen with this too-neglected hand. In view of these facts, it is evident that few more important subjects can be offered for the consideration of educators than that which is presented in this impressive essay.

THE HUPA INDIANS: AN ETHNOGRAPHIC SKETCH.

ONE who has charge of a museum is frequently told, "I should be delighted to help you if I only knew what you want." In the former articles of this illustrated series special arts have been elaborated in order to explain the completeness desired in anthropotechnic collections. The present paper appeals to the traveller, the missionary, the army or navy officer or private, and shows what any one of them may do at his leisure.

Since his expedition to Point Barrow, Lieutenant Ray, U.S.A., has been stationed at Fort Gaston, in north-west California, on the lower Trinity River. Here is the Hupa reservation, and here dwell what are called the Hupa Indians, — bands known by various names, but nearly all belonging to the Pacific coast branch of the great Athabascan stock, represented by the Kulchin and Tinné on the north, and by the Apache and Navajo on the south. Before these aborigines were terrorized by the white miners and fishermen, they were, in the language of Stephen Powers, the Romans of California. Although they have been calmed down to the normal stagnation of a government reservation, there remains a great deal of the old art and civilization among them. They are really in the neolithic age, and may tell us much about the way

in which Frenchmen of the Robenhausien epoch lived.

If we commence by saying that their mountain homes are in the midst of giant redwoods, that their streams are the resorts of the salmon, that around them grow the materials for the finest textiles and clothing, the story of their daily life is blocked out.

The Hupa lives in a puncheon or slab house (see accompanying plate, 1, 2), and paddles his canoe of redwood in the fish-prolific waters of the Trinity and Klamath. By means of elkhorn wedges and neatly polished, bell-shaped hammers, he is able to reduce the largest tree to any desired form of slab, which he smooths and shapes with adzes, formerly flint-bladed, now edged with steel. He also cleansed himself in a sweat-house, sat on a humble chair (4), slept like an oriental on a pillow of wood (5), and nursed his baby in the prettiest of willow cradles (3). His mush he cooked in a water-tight grass basket (6) by means of hot stones (7), baked his bread in rude soapstone pans (9), and served his roasted salmon in a wicker tray (8). Since the U. S. fish-hatching station has been planted not far off, he gently scoops around the wharf in rude citizen's dress; but formerly he made a barbed harpoon from the leg-bone of the deer (10) and rawhide, and therewith landed the wildest salmon.

Neither ancient nor modern savage could surpass him in chipping jasper and obsidian. His *lames de silex*, whether fur-wrapped (13), hafted in wood (14), or on a long pole for fishing (15), are justly the admiration of the world. His finest weapons, however, were his bows and arrows (16). The bow is of yew or cedar, and so deftly backed with a mixture of shredded deer-sinew and fish-glue that the uninitiated mistake the backing for a tough bark. His arrow consists of the following parts: shaft of willow or other soft wood; fore-shaft of hard wood, inserted in the pith of the shaft and seized with sinew; head of jasper or obsidian, untanged, and lashed with sinew; and the feather often laid on spirally. Add a pretty quiver of otter, fox, or wolverine skin, and the artillery is complete.

The Hupa women are among the most refined and delicate tanners, embroiderers, and basket-weavers in the world. A cloak of deerskin (19), fringed and decked with colored grass, or a skirt of pine-nuts, etc., is a most graceful drapery.

The Hupa has a kind of money (17) made by wrapping snake-skin or maiden-hair fern bark around long dentalium shells (17). He also cuts out disks from the clam or olive shells. The former money he keeps in a curious pocket-book of elkhorn hollowed out and wrapped with buck-