A new biological frontier: your favorite lake

Cal R. Fremling

Winona State University

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A New Biological Frontier:
Your Favorite Lake

CALVIN FREMLING, Ecological Research, University of Utah

Were we being followed? A quick glance over my shoulder assured me that we were. We were greatly outnumbered, and knew from past experience that our followers were hungry. The thought of food was obviously foremost in their tiny brains. They seemed to know that we would provide them with their dinner. We made no effort to elude them as we leisurely swam toward the sandy bottom, for these timid creatures in our wake were old friends of ours.

I watched as my companion glided downward to an algae-covered rock. Carefully he dislodged it. A small crayfish darted out, only to be pounced upon by a horde of flashing silver forms. Our friends, the rock bass, had lost all fear now. Impatiently they waited as Chuck rolled over the large rocks on the bottom of the river in that languid, effortless fashion of men who invade the world of water. The ravenous throng seemed disappointed as the interloper snatched first one and then another of the larger crayfish and placed them in the flimsy sack which flowed from his belt. Looking up, Chuck smiled as he watched the goggled-eyed fish hovering around him with their disappointed, mildly reproving expressions over having lost another large crayfish. Suddenly he laughed! Even when only ten feet below the surface laughing is a near calamity. Up he went! He was still gurgling and spitting water when I surfaced. Lifting our face masks we swam lazily to a sun-baked sand bar for a rest, and the unfinished portion of his laugh.

The collection of biological materials for the class room usually entails a considerable amount of work, but we hesitated to consider our afternoon's activity as "work." Spending an afternoon in the fishes' "back yard" is an education in itself, but this underwater venture was also profitable in terms of the materials that we had collected. Our two hours of sport had yielded enough clams, crayfish, turtles, leeches, snails and other materials for an entire school year of laboratory study and dissection. But by far the most pleasant aspect of our adventure was the element of exploration. To the observer with a face mask every familiar lake, pond, and river becomes a new and unexplored world.

Much has been written recently about shallow water diving (sometimes called "skin diving" or "free diving"). Many coastal colleges and universities have integrated this sport into their biology program as a supplement to conventional laboratory work. Relatively little attention, however, appears to have been directed toward freshwater free diving. The vast majority of our schools (both high schools and colleges) are inland. Most of these schools have adequate bodies of water near at hand, ready to open entirely new vistas for the curious and progressive biology teacher and his students. Yet, virtually none of our inland high schools have made any serious effort to include this type of field experience into their biology work.

Contrary to one's initial supposition, practically no equipment is necessary for such a field trip. Only the face mask is actually mandatory. These masks enclose the eyes and nose, and should be used instead of goggles. Goggles offer much less protection to the diver and are much less durable. Swim fins are a great aid in underwater work; they increase the swimmer's speed, and permit him to swim easily without having to use his hands. This "emancipation" of the hands tremendously increases the amount of work which can be accomplished in any given dive. The swim fins, however, are not necessary for field trips such as are considered here. A mesh or net sack (such as potato or onion sacks), with a band of elastic woven through its open end and attached to the belt of the swimmer, serves most admirably as a collecting bag. The inability to swim will curtail the activities of many students, but such field trips greatly increase their desire and their opportunities to learn how to swim. Non-swimmers can participate in the activities too. With a properly fitted face mask, the non-swimming student may wade into the water only waist deep and, by placing his face in the water, observe this new medium and collect many
valuable biological materials. The greatest fear of the beginning swimmer is that of getting water into his eyes, nose, and lungs. The face mask helps to alleviate these fears. Water scopes (water-tight containers with open tops and glass bottoms) are easily constructed and permit an observer to watch this fascinating underwater world from a boat or dock. Students not engaged in swimming or shore-line collecting can be occupied with caring for specimens which are brought to the surface. Most of these materials must be placed in containers of water or preserved immediately.

During the winter months it is impossible to engage in this type of collecting in most sections of the country, but the early fall and late spring days are well suited for such activities. This type of field trip is an ideal motivating activity for prospective biology students. Inviting next-year's "undecided" students to accompany such a late spring field trip aids materially in assisting them to make their decision the following autumn. Subsequent biology laboratory exercises are doubly interesting and instructive to the students because they work with materials which they collected or preserved for themselves, and which still are marked with the tags bearing their names.

Biology is defined as the study of living things. Our inland waters abound with life, and they lie waiting to be explored. Here is a living laboratory that teaches biological principles in a vitally new and dramatically effective way. Here is a challenge to the progressive biology teacher. Here is a new biological frontier in your favorite lake.