methods of biologic research; he needs practical training in systematic and faunal zoölogy and botany with special reference to the extent of individual variation in species, the modification of species by food and environment, and the nature and constancy of specific characters in different groups; he should have the benefit of lectures on the principles of biology and on the geographic distribution of life; and he should be taught to work out for himself the relationships and probable genetic affinities of the members of a few well-selected genera in different groups.

The teacher and professional student who aspire to tread the higher paths of biology are unworthy of their chosen field unless they possess a broad and comprehensive grasp of the phenomena of living things — a grasp that comes only after years of patient study and personal familiarity with animals or plants. Perhaps the true explanation of much of the prevalent kind of biology may be found in the circumstance that a considerable proportion of our teachers are the output of a few institutions in which their studies have been guided by section-cutters and physiologists. They are well trained in methods of research in limited fields, which training may be acquired in the brief space of three or four years, but are ill fitted to impart a knowledge of the leading facts and principles of biology, or of the kind of biology likely to prove most useful to the average student.

Some of our universities encourage and support the most abstruse and recondite investigations in the field of pure science, without regard to an economic outcome — for which they deserve the greatest credit — but such studies are rarely suited to the requirements of the ordinary college curriculum. On the contrary, the tendency of the times in matters of instruction is to render undergraduate courses more practical, so that the knowledge acquired may be useful in after life. With this end in view, it may not be amiss to inquire how the kind of biology now commonly taught compares with systematic and faunal zoölogy and botany? Will anyone attempt to maintain that 10 per cent of the present teaching is of any value in after life, except to the specialist, or that more than one per cent of the students taught biology become specialists? It seems clear, from the standpoint of availability in the ordinary walks of life, that the prevalent kind of biology teaching is a failure. Systematic and faunal zoölogy and botany, on the other hand, while fully equal to the branches now taught as a means of mental discipline, have in addition an economic value, and are sources of permanent interest and happiness to the majority of mankind. Huxley, in one of his early public lectures, said: "To a person uninstructed in natural history, his country or sea-side stroll is a walk through a gallery filled with wonderful works of art, nine-tenths of which have their faces turned to the wall. Teach him something of natural history, and you place in his hands a catalogue of those which are worth turning round. Surely our innocent pleasures are not so abundant in this life that we can afford to despise this or any other source of them" ("Lay Sermons, Addresses, and Reviews," London, 1870, pp. 91–92). Not only are excursions into the country or to the sea thus made more enjoyable, and the tedious delays at the railway station converted into sources of entertainment and profit, but even much of the drudgery and routine of everyday life may be turned to good account. Instead of the mental stagnation that naturally follows the automatic performance of a monotonous daily task, there is an incentive to observation that stimulates the intellect and results in the agreeable acquisition of knowledge. In short, acquaintance with our common animals and plants appeals to an inherent desire to know more of nature in the aspects commonly presented to our senses; it increases the joys and lightens the burdens of life; it promotes the healthy expansion of the intellect and the development of the nobler impulses and sentiments, making better men and better women.

Another argument in favor of a knowledge of systematic and faunal zoölogy and botany is that it largely increases the amateur element in science and brings the great mass of the intelligent public nearer the technical specialist, thus creating that interest in and appreciation of scientific research that leads to liberal endowment. The kind of biology now taught in most of our educational institutions has the opposite effect, tending to deepen the chasm between the people and the specialist. So long as an