and bones, need much difficult inventing for their finding. What would the learned world not give for multitudinous sculpture and artifacts from the ancients of all lands, and for carved writings, and bilingual "Rosetta stones" whereby to read them, of the Picts, Iberians, Etruscans, Mayas, and a hundred other peoples of earliest history! And for implements and bones of their and our ancestors back for millions of years! They are lying beneath our feet in countless places; but we must invent the means to find them, by reflected sound waves or whatever it will take.[362]

5. Other Biological Inventions

[358] With the world's exploding population, and our own people among the faster growing, a shortage of agricultural land is a problem almost everywhere. If we mean to accept and continue the explosion, we shall probably need some radical inventions to increase the food supply in quantity if we are to hold our level of well-being, and in quality too if we are to raise this. One means is *hydroponics* (soilless agriculture), with which there is no limit to the food that can be raised per acre, in greenhouses multistoried and flooded with perpetual artificial light. But this will take much development of growing methods, special harvesting and building machinery, new adapted varieties of plants and animals, economical light of the best colors, and much power supply. The most immediate and sure recourse, Meier contends in his excellent survey of how invention can meet the world's economic problems,[359] would be the growing of green algae in treated water, for protein and carbohydrate food for poor people and animals. Our abundant *salt marshes* could also be put to use.[363] And with fostered understanding of chemistry, there are unlimited possibilities of *synthesizing food* and other organic compounds directly from the elements. This is already done on a vast scale for plastics, textiles, dyes, drugs, and even some foods. One means of doing so, photosynthesis imitating the chlorophyl by which Nature builds the green world, has been often studied of late, especially through algae.

[359] *Insects* are enormously important for both good and ill; and since they never stay put, on the right side of landowners' fences, they peculiarly need the wide-spreading authority of the nation. Our Departments of Agriculture, and Public Health, are activated to meet them, sometimes with legal authority over men harboring certain insects, oftener with funds for research, invention, and propaganda against tiny pests. Often means for killing certain kinds kill beneficial species too, say poisoning the birds and other life that feed on them. A selective remedy that seems to ask development is to play the mating call of one species, through strategically placed loudspeakers, so as to lure to destruction one sex of that species only. It has been done.[364] Or take another example exploiting the endless variety and specificity of insects' instincts. The female fly of the screw-worm, a tropical cattle pest, mates only once. So swarms of males were raised, sterilized by X-ray, released to find and sterilize females, and so thus their race was exterminated in Curaçao.[365] A like program has been started here.

[360] The varying minute percentage of *ozone* in the air, and/or the changing *ionization* of the air which accompanies this, seem to have important effects on human health and mental alertness. Although