

should give a fair amount of rigorous thought are such as the following—I choose my illustrations from engineering, but take them from outside of electrical engineering so that we shall not fall into controversy over the suggestions:

The railroad is a contribution by engineering to civilization: but is it good to spend money to ship cream to Massachusetts from the middle west by railroad and thereby depress the price paid to New England farmers below the level of fair profit and without providing any offsetting advantage to urban consumers? Is it good to cross-ship cranberries from Cape Cod into Wisconsin, which is a cranberry producing state, and from Wisconsin eastward, with an excess of shipping cost to be absorbed by producers and consumers? Is the country being misled by the many times repeated statement that our tremendous expenditures for hard-surfaced roads are being made for the farmers' benefit; and even if it is "good politics" now, is it ethically right and for the general good to spend from ten thousand to thirty thousand dollars a mile for secondary highway networks when half the money might suitably service the particular purpose and *any* money for the purpose has to be raised by difficult taxation, either in the locality concerned or over the nation?

These are typical illustrations from the extraordinary range of eccentricities of commercial distribution and of expenditures for permanent plant which have arisen through uncontrolled and thoughtless use

of the engineers' priceless gift to civilization of modern transportation. Substantially every other engineering contribution to civilization is similarly abused. These eccentricities produce annual wastes of man-hours and of money. Are they either good commerce in the long run or sound political economy? Do the people of the nation possess sufficient wealth to support thoughtless community waste? Can we introduce restraints into such activities sufficient to cure or ameliorate the wastes and yet not cause undesirable restraints on the cherished independence of the individual beings that compose the community?

Until we engineers as individuals and as civic groups can apply accurate and impartial thinking in reflecting over these and many similar questions which essentially relate to those engineering applications that influence convenience of life throughout the nation and profoundly affect the economic condition of the citizens, we still have some important feature lacking in our education. We must fill in this lack, but we must accomplish the purpose without deteriorating our greatness in engineering science and the arts. While trying to do this, we must not forget that the activities of the average professional reformer or unreflective enthusiast not infrequently are as inimical to the general community welfare as the activities of the average professional demagogue. The two persuasions therefore ought to receive equally exacting scrutiny before their measures are accepted or supported.

OBITUARY

HOWARD AYERS

THE passing of Dr. Howard Ayers last October has been noted already. Critical valuation of his contributions to the comparative morphology of some of the lower vertebrates may be left to those who work intensively in the field where he was a contributor and controversialist.

Some of us who worked with him in the laboratory day by day would like to testify to human values. Ayers possessed in marked degree a kind of spiritual intuition, which led him, after an hour in a laboratory full of students, to crook his finger at one, take him to his office for an hour and send him forth an enthusiast for biological investigation. No less a figure than Dr. Erwin F. Smith confessed to such inspiration in a first year of biology with Ayers. In the classroom, his uncanny ability to see in the subject under discussion just what phases had escaped the student and bring those points up for discussion was phrased in his characteristic way, "What do they take me for? Do they suppose I would waste my

time asking a question which I thought they could answer? I ask questions to make men think."

His laboratory was a workshop which was almost entitled to the sign, "We Never Close." A graduate student who held the watch on him got the retort, "Young man, you belong here when you don't have to be elsewhere." Again, he called in a medical student—"Mr. M., I believe the Almighty put every man into the world for a purpose. If he finds out what that purpose is, he becomes useful and successful. He certainly did not intend you for a doctor."

Howard Ayers was not popular, but no man who came into intimate contact with his broad scholarship, his enthusiasm for work, his intolerance of sham or pretense, could fail to recognize his claim for leadership, based like that of the knights of old on being always a little the best man on the job. Such men went away from Ayers' laboratory better and more useful for the contact.

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