Asia. "I would only say," he writes, "that it seems far more desirable on principle to get the Soviet forces out of Central and Eastern Europe than to cultivate a new Germany for the purpose of opposing them while they remain there." And if we are to get the Soviet forces out of Central and Eastern Europe, we shall have to withdraw our own forces from most of Europe. Once this mutual withdrawal has been agreed upon, a number of things become possible. Unification of Germany on the basis of free elections will become feasible—provided a united Germany is neutralized as between NATO and the U.S.S.R. Only when Soviet troops are withdrawn from the present Russian satellites such as Poland, Hungary, and Czechoslovakia can there be any hope for the development of free democratic governments in those countries. But, as in the case of Germany, a condition of their freedom will be a policy of neutrality as between Russia and the West. Neutrality and demilitarization (save only for paramilitary police) would be a small price to pay for their independence and the progressive relaxation of international tension in Eastern Europe.

It is on some such terms that Kennan would attempt to mitigate, if not to cure, the political paranoia that afflicts the government and people of the Soviet Union, and to free Europe from the paralyzing fear of nuclear war.

There are calculated risks in this, as in any policy. What if the Russians—who are not above lying and breaking agreements when it suits their purpose—were to "move in" on Europe once our own forces had moved out? Would this not leave us with no other alternative than all-out nuclear war on the Soviet Union, and thus invite the very catastrophe we seek most to avoid? To these questions Kennan offers two answers. "We must get over this obsession," he says, "that the Russians are yearning to attack and occupy Western Europe." The Soviet threat, he argues, is primarily political, not military, and when the defense of Europe becomes a problem for Europeans without "the armed forces of the United States and Britain," the people of Europe will show more initiative, energy, and imagination to that end than they now exhibit. Their major problem would then be one of "internal health and discipline . . . to prevent the conquest and subjugation of their national life by unscrupulous and foreign-inspired minorities in their midst." But would not the withdrawal of American and British forces from Europe give aid and comfort to the already powerful Communist minorities in France and Italy, for example? To prevent this, Kennan urges the strengthening of Europe's own defense forces and, more especially, establishment of paramilitary or territorial militia, trained to put down internal uprising and subversion. "I can give personal assurance," writes Kennan, "that any country [that does this] . . . will have little need of foreign garrisons to assure its immunity from Soviet attack."

It is this note that Dean Acheson has labeled "messianism" in Kennan, and one is led to wonder whether, on balance, Europe can more safely rely on Kennan's "personal assurance" than on the armed forces of NATO, including the United States and Britain.

There is much more in this book that deserves comment. Kennan's views on foreign aid are a strange mixture of neo-isolationism, moral indignation, and faith in a kind of Machiavellian power politics. "I . . . reject the suggestion," he says, "that our generation in the West has some sort of cosmic guilt or obligation vis-à-vis the underdeveloped parts of the world. The fact that certain portions of the globe were developed sooner than others is one for which I, as an American of this day, cannot accept the faintest moral responsibility." If we are told that without our aid this country or that will go Communist, Kennan would say, "Very well, then go. American interest will suffer, but yours will suffer first." Besides, he says, a "sizable portion of mankind has more respect for power and success than it has for principle." Just what, in the light of all this, he means when he says, "If we are to help each other in this world, we must start with a clean slate," I am at a loss to know. As though in politics or anything else one *ever* starts "with a clean slate."

Whatever one may think of Kennan's specifics, his book represents a refreshingly high level of argument and analysis in the most difficult science in the world—the science of politics. Moreover, as James Reston of the *New York Times* has observed, Kennan can write. "Much of the political debate in this country," Reston says, "sounds like the droning of two old bagpipes." Not so in Kennan's case. Learning and wisdom are combined with a brilliant prose style, as for example, in his comment on the changing technological realities of present arms competition and their consequences. "Are we," he asks, "to flee like haunted creatures from one defensive device to another, each more costly and humiliating than the one before, cowering underground one day, breaking up our cities the next, attempting to surround ourselves with elaborate electronic shields on the third, concerned only to prolong the length of our lives while sacrificing all the values for which it might be worthwhile to live at all?"

If this is to be our future, he would say, "let us divest ourselves of this weapon altogether; let us stake our safety on God's grace and our own good consciences, and on that measure of common sense and humanity which even our adversaries possess; but then let us at least walk like men, with our heads up so long as we are permitted to walk at all."

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Human Protein Requirements and Their Fulfilment in Practice. Proceedings of a Conference in Princeton, [N.J.] United States (1955). Sponsored jointly by the Food and Agriculture Organization of the United Nations; the World Health Organization; the Josiah Macy Jr. Foundation. J. C. Waterlow and Joan M. L. Stephen, Eds. Wright, Bristol, England. 193 pp. $2.

The rapid increase of world population has led to the fear that the human race may outrun its food supply. Although there exists no danger that energy food may become short in the immediate future, as far as protective foodstuffs are concerned, many areas of the world are suffering already from serious deficiencies which are particularly detrimental from the standpoint of the healthy development of children. While the more spectacular vitamin deficiencies have been given proper attention, it is only lately that the need for a well-balanced protein intake containing adequate amounts of all essential amino acids has been emphasized. Thanks to the endeavors of numerous scientists and such international organizations as the Food and Agriculture Organization of the United Nations, the World Health Organization, and the United Nations International Children's Emergency Fund, we have gone a long way not only in recognizing the requirements for proteins of a certain amino acid composition in the various stages of human development but also in meeting these needs cheaply and economically in areas of malnutrition.

In this respect the Princeton conference of 1955, arranged by the abovementioned agencies with the assistance of the Josiah Macy Jr. Foundation, was a great step forward, inasmuch as it not only arrived at quantitative determination of protein requirements but also removed the specter of protein starvation due to inadequate supply of animal products. In this respect results obtained in feeding mixtures of certain seed proteins, such as soybean, peanut, cottonseed, and sesame cake flour, are very promising, especially in children's diets. Since many of these products can be obtained as by-

products of oil extraction and are presently used for animal nutrition, their direct use as food supplement for human beings in areas of shortage should not be too difficult, or economically prohibitive.

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The American Idea of Mission. Edward McNall Burns. Rutgers University Press, New Brunswick, N.J., 1957. xii + 385 pp. Illus. $9.

America is not alone in possessing a sense of national destiny, but with us this feeling has been especially acute and pervasive. This sense of mission, according to the author, centers around a number of convictions: that America has developed more completely than have other nations the principle of liberty; that we are the greatest exemplar of human equality; that ours is the most democratic of all governments; that we are more imbued with a love of peace than are the quarreling peoples of other parts of the earth; that we can lead the world to greater happiness by the example of a high standard of living.

The author supports his conclusions from the works of a host of political leaders, historians, essayists, and other writers. Among these may be mentioned James Wilson, Madison, Hamilton, Franklin, Calhoun, Lincoln, Theodore Roosevelt, Woodrow Wilson, Harry Truman, Bancroft, Fiske, Beard, Emerson, Edward Everett, Wendell Phillips, Henry George, David Starr Jordan, Albert J. Beveridge, and Walter Lippmann. Despite the differences in the periods in which these men were active and the variety of their respective natures, there runs throughout their utterances a note of optimism, sometimes mystical in tone, about American character and institutions that promises well for the world.

It is inevitable that the historian of our ideals should see discrepancies between the conception we have formed of ourselves and the reality of our attainment—that courts have upheld laws that restricted liberty; that racism has conflicted with the doctrine of human equality; that forms of censorship have denied the freedom that democracy implies; that glorification of victory is not consistent with a hatred of war; that many families with low incomes cannot enjoy the living standards of which we boast. Even our conception of ourselves may be imperfect and, as the author points out, where we credit our superiority to "initiative, independence, aggressiveness, perseverance, industry, frugality, and enterprise," such New Testament qualities as generosity, humanity, tolerance, and justice are seldom included in the boast.

In making clear the weaknesses that have appeared in our estimate of ourselves and of our destiny, the book seems sometimes to undervalue the idealistic element in American thought and action. A nation that threw its weight into winning a great war from which it claimed no material reward, other than some indefinite claims on the island of Yap, may have entered that war in enthusiastic innocence and deceived itself cruelly as to what it was accomplishing. But certainly we had raised ourselves above the common level of victors, and this record of altruism is not cancelled out by recalling what we did to the Indians.

If we admit that our conception of ourselves often has been naive, it has nevertheless been an ideal, and the ideal is the first step toward attainment. This the author may have in mind when he says that our sense of mission runs like a golden thread through most of our history and, "purged of its dross of conceit and illusion . . . remains one of the noblest expressions of idealism that any nation has embraced."

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The Biological Action of Growth Substances. Symposia of the Society for Experimental Biology, No. XI. H. K. Porter, Ed. Academic Press, New York; Cambridge University Press, London, 1957. viii + 344 pp. $9.50.

Symposia on animal hormones—for example, the Annual Laurentian Conference—are frequently held, and symposia on plant hormones take place occasionally. The present symposium differs from others in being almost equally divided between plants and animals. Although it is unfortunately true that the speakers in zoology virtually never refer to work with plants, and vice versa, still the juxtaposition is stimulating to the reader and must have been more so to the participants in the symposium. A few topics are dealt with by both groups. The growth-promoting effects of antibiotics, discussed by J. W. G. Porter for farm animals and touched on for some plants by P. W. Brian, are still not fully explained, although Porter makes a strong case for an antibacterial effect, exerted on Clostridia causing subclinical intestinal infections, which, in the normal animal, would reduce growth below the optimum. The development of tumors from normal tissue, described by A. Braun for plant tissue cultures and by G. Klein and E. Klein for animals, shows marked parallelism between the two kingdoms, for both articles present the change as essentially the development of autonomy, or independence from specific growth stimulators and inhibitors. Braun gives evidence for the activation or unblocking, in crown gall, of systems synthesizing four different growth substances, including auxin and a cell-division factor, while G. Klein and E. Klein envisage two basically different types of mechanism, one depending on the selection of variant cells, the other on modifications caused directly by a factor in the host environment.

P. W. Brian discusses the causes of overgrowth in plant diseases, comparing in particular the actions of auxin and gibberellin; he shows proper caution in ascribing the observed overgrowth to specific factors, in the absence of rigid proof, but he makes a common mistake when he compares the ability of pathogens to produce galls with their ability to form auxin in pure culture. It is of course the ability to form auxin in the host tissue that is critical, since culture media may not duplicate the nutrition supplied by the host tissue. Gregory and Veale's paper on "Apical dominance in plants" (inhibition of lateral buds by the terminal) exemplifies the bankruptcy of ideas that has beset this subject in recent years; having chosen a plant in which the influence of the terminal bud —that is, the hormonal factor—is evidently weak, these authors conclude that the main determinant for lateral bud growth is nutrition, especially nitrogen supply. It is not surprising that if growth is not being strongly inhibited it will be limited by some nutritive factor. The effect of auxin in inhibiting lateral bud growth they ascribe to its interference with the formation of provascular strands, in spite of the fact that several workers (Camus and Wetmore, with tissue cultures, and Jacobs, with whole plants) have shown that auxin strongly promotes this process. A much more satisfying approach to the old problem of apical dominance develops from the work on the interrelations between auxin and kinetin in tissue culture, discussed by F. Skoog and C. O. Miller. Indeed, recent work in my laboratory demonstrates that applied kinetin can largely offset typical lateral bud inhibition exerted by the terminal bud, while the similar inhibition exerted by externally applied auxin can be overcome completely.

Two papers, by J. D. Biggers and coworkers and by E. Wolff, respectively, are largely concerned with the complex nutritive requirements of animal tissue cultures, and a useful compilation of data is included. Two others, by L. Brauner and A. R. Schrank, deal with tropisms in plants, the former with the light gradient necessary for phototropism and the latter with bioelectrical aspects both of tropisms and of curvatures caused by auxin. A thoughtful and analytical treatment of the problems involved in