

ENGINEERING AND SCIENCE

Monthly



Vol. VII, No. 11

December, 1944

"The Old Order Changeth . . ."

By WILLIAM B. MUNRO*

SINCE the beginning of the Christian era there have been 65 generations of men. But in looking back over this long stretch of nearly two thousand years it is significant that there have been very few generations in which it could have been really thrilling to live. As for the rest, men were born, lived and died in a world which remained substantially unaltered during the course of their pilgrimages from the cradle to the grave.

Now whatever else may be said about the generation in which you and I are living, one thing can at least be looked upon as certain. This first half of the twentieth century will go down in history as perhaps the most astounding interlude in the entire annals of mankind. Yet those of us who are living through it, I am afraid, have only the most elementary appreciation of its far-reaching significance. The vast majority of our people have not yet sensed the immensity of the changes which are taking place immediately around us, changes not only in what we call the American mode of life but in our traditional philosophy of government, in our relations with the rest of the world—indeed, in our whole orientation of thought.

This vast transformation in our social outlook is not the handiwork of one administration, or one political party, or one group of leaders. It is not attributable to any single cause. It amounts to a social revolution, and revolutions are not made by anyone; they come. They come in the sequence of events; they are inspired by causes which lie far below the surface, and they are rarely recognized as revolutions until after they have run their course.

In this connection one of the rarest among human qualities is the virtue of hindsight. People speak of foresight as a great and rare virtue; but hindsight is an even greater and rarer one. It is surprising, when you come to think of it, how few among us realize that the future is merely the prolongation of the past, and that the law of continuity is the most fundamental of all the laws which govern the evolution of the social order. We build things that are new on things that are old; hardly ever do we abolish any established social, political or economic institution. What we do is to alter it by successive steps until the whole character of the institution is changed, and these changes are sometimes wrought so insidiously that their significance is not fully recognized until after the process has been completed. That is

where the danger lies in all eras of transition; we lose sight of the landmarks from which we started and are carried farther than we intended to go. Looking back over the happenings of the past dozen years one feels as though he were sitting on the rear platform of a train gazing wistfully at a rapidly receding landscape. And no matter how much we may regret it, this receding view is one that we will never see again, at any rate, never in the same perspective.

CHANGES IN THE POLITICAL SCENE

Not long ago I was asked to indicate what, as a student of government, I regarded as the most important changes in the American political scene during the interval that has elapsed since the turn of the twentieth century. The answer, as you may well imagine, is not an easy one to make. But if I were compelled to answer I would say that the most fundamentally significant of all the changes which have taken place during these four decades are those which concern, *first*, the relationship of the American federal government to the states of the Union, and *second*, those which concern our relations with the rest of the world.

For more than a hundred years after the establishment of the nation this relationship underwent no substantial change. It remained, in general, as it had been set up by the founders of the Republic. The federal government took care of the national defense, conducted our relations with foreign countries, and regulated commerce among the several states. These were its principal functions. Most other matters were left to the states, as the Constitution intended them to be. The states regulated trade and industry within their own borders; they were left free to manage their own educational systems; they supervised their own banks, public utilities and insurance companies; they were responsible for the protection of the lives, liberties and property of their own people. For well over a century the two branches of government, national and state, worked with reasonable harmony within their own orbits, each with due respect for the rights and functions of the other. It is true, no doubt, that this balanced adjustment of responsibility, which is the essence of federalism, did not always operate smoothly; it creaked rather badly at

*Commencement Address, California Institute of Technology, October 30, 1944.

times and in spots; nevertheless it did provide an arrangement under which the work of governing a rapidly expanding society was successfully carried on.

But in our time we have seen a radical departure from this traditional philosophy of governmental responsibility. Step by step the national government has been reaching into fields of jurisdiction which the states have hitherto regarded as their own, driving a wedge here and there, until the old apportionment of powers has been seriously thrown out of balance. The dislocation is far more extensive than is generally realized. Nor does this great expansion of federal powers appear to be a temporary affair, dictated by national emergencies. It has the earmarks of a planned invasion, designed to be permanent. Its apologists have been at no pains to conceal their underlying purpose, which is to concentrate in the national government the ultimate power over all industry and labor (whether directly engaged in interstate commerce or not), and in large measure over agriculture as well. It aims to supersede, by federal control, the jurisdiction which the states have always exercised over the enterprises of their own people and over their own natural resources. It has already succeeded in centralizing at Washington a virtually complete mastery over the entire banking and credit facilities of the country. By the device of grants-in-aid, or subsidies for public works as well as for all manner of social welfare projects, the federal authorities have been quietly insinuating their way into an illegitimate mastery over the individual commonwealths.

EXPANSION OF FEDERAL POWER

Some expansion of federal power has doubtless been justified by the necessity of dealing with great and difficult economic problems on a national scale; but no one should disguise from himself the fact that, whatever its justification, this steady absorption of state functions by a centralized bureaucracy is inexorably reducing the individual states to a secondary place in the frame of government. And to the extent that this is being done the foundation of American government is being changed. Perhaps it is time for a change; perhaps there is no escape from it; but at least we should realize what we are doing while we are doing it.

The division of this country into 48 states is not a mere geographical accident. It is not merely the product of historical circumstances. On the contrary, it is the exemplification of a sound principle, namely, that in a country so vast and varied as the United States there must be a division of governmental functions between central and local authorities, otherwise the whole edifice will sooner or later break down by reason of its sheer top-heaviness. If there is any one thing that has been a success in the American practice of government during the past 150 years it is the success with which so large a part of it has been kept close to the homes of the people. It has been government not merely by those who pay the bills but by those who know that they are paying the bills. To the extent that we remove government farther away from the homes of the people there will be a loss not only in its representative character but in the adaptability of public administration to local needs and conditions.

North Dakota and Mississippi, Rhode Island and California are under the same flag, but this does not mean that they should be forced to have their widely-varying problems handled in precisely the same way. The theory of federal centralization assumes a uniformity of American life which does not in fact exist. Our strength as a nation arises from diversity as well as

from unity. It assumes that the principal concern of a government is with economic affairs, forgetting that the citizen is a man and not merely a worker. Political philosophy should take in a much wider sweep than political economy. Any centralized pressure that tends to force all the 48 commonwealths into a common mold is bound to impair their individuality, and in the long run what weakens the states will weaken the nation.

There can be no permanent autocracy in America so long as the states are vigilantly protected in their fundamental integrity; on the other hand we should bear in mind that in all the countries where free government has perished the first step towards dictatorship has involved the extinction of local autonomy. We may seem to be far from any such danger in the United States, but the whole history of nations has shown that the deprivation of popular liberties invariably begins with measures which are loudly proclaimed to be for the protection of the people. We are a people with the instincts of political caution and I haven't the slightest doubt that if any open attempt were made to convert the 48 states into mere provinces of the nation there would be a surge of protest all over the country from Portland, Oregon, to Portland, Maine. But when the same thing is being attempted by what one of my colleagues has called "the artichoke method," that is, by pulling off a leaf at a time, there seems to be very little resentment at all.

AMERICA'S OBLIGATION FOR WORLD PEACE

But the most momentous task which will face the United States of America during the next few years is not concerned with our internal problems, great and difficult though some of these may seem to be. I do not think it an exaggeration to say that in determining what kind of world we are going to have tomorrow, and the day after tomorrow, the present generation of Americans has in its hands the most extraordinary opportunity ever presented to any nation at any time. This is because the United States has today achieved a position where we can, if our people are willing, play a decisive part in charting the course of world peace and progress for generations yet to come. We can assume the obligation to help guide international relationships in a way that will help to prevent future wars, or we can abdicate this high privilege and let the future gravitate into its own course, which is what happened after the last great conflict, with tragic consequences to everybody, including ourselves. Between these two alternatives no thoughtful citizen should have much hesitation in making a choice.

And of course there is no substantial disagreement among the people of this country on the general proposition that there ought to be a world organization for the preservation of peace and that the United States should be a part of it. Indeed it is in that simplification of the problem that much of our trouble begins. Everybody desires peace, but not everybody is ready to approve the sacrifices which the effective maintenance of peace must inevitably entail. Yet if we desire the end we must tolerate the means which are essential to the attainment of the end. That ought to be a self-evident proposition, although not all our political leaders seem to realize it. No country has a greater interest in the preservation of peace than we have. The greatest of all our national interests is peace. Surely the protection of this national interest is worth any reasonable price that we may be asked to pay for it—even though the price involves both future commitments and potential restraints upon our own freedom of action. If ever there was a problem which calls for largeness of mind and a willingness to

(Continued on Page 14)

Society. (Privately printed at the Chiswick Press, London, 1903).

Gilbert, Physician: A Note prepared for the Three-Hundredth anniversary of the Death of William Gilbert of Colchester, President of the Royal College of Physicians, and Physician to Queen Elizabeth. (Privately printed at the Chiswick Press, London, 1903).

The Family and Arms of Gilbert of Colchester. Transactions of the Essex Archaeological Society 9, 197 (1906). (Read before the Society on June 25, 1903).

Other books, articles, and lectures dealing with the life and work of Gilbert are the following:

William Gilbert of Colchester, Charles E. Benham, (Colchester, 1902).

Bacon, Gilbert, and Harvey, Sir William Hale-White, (London, 1927).

"*William Gilbert,*" *Dictionary of National Biography,* Sir Norman Moore.

William Gilbert of Colchester on the Loadstone and Magnetic Bodies, P. Fleury Mottelay, (New York, 1893).

William Gilbert, of Colchester, Conrad William Cooke, *ENGINEERING,* 48, 717, 729 (1889).

Dr. William Gilbert (1544-1603), Charles Singer, *JOURNAL OF THE ROYAL NAVAL MEDICAL SERVICE,* October, 1916.

William Gilbert and Magnetism in 1600, R. B. Lindsay, *AMERICAN JOURNAL OF PHYSICS,* 8, 271, (1940).

William Gilbert and the Science of his Time, Sidney Chapman, *NATURE,* 154, 132 (1944).

William Gilbert: His Place in the Medical World, Walter Langdon-Brown, *NATURE,* 154, 136 (1944).

There are two English translations of Gilbert's *De Magnete, Magneticisque Corporibus, et de Magno Magnete tellure; Physiologia nova, plurimis argumentis, experimentis demonstrata* (London, 1600. Later editions, Stettin, 1628, 1633; Frankfurt, 1629, 1638), one by P. F. Mottelay entitled *On the Loadstone and Magnetic Bodies, and on the Great Magnet the Earth. A New Physiology, demonstrated with many arguments and experiments,* (New York, 1893) and one by the Gilbert Club entitled *On the Magnet, Magnetick Bodies Also, and on the Great Magnet the Earth; a new Physiology, demonstrated by many arguments and experiments* (London, 1900). The latter is the definitive translation and is, as far as circumstances would permit, a facsimile (in English) of the original Latin edition of 1600.

"The Old Order Changeth"

(Continued from Page 4)

venture, it is this one. And if ever there was a time for casting aside our minor doubts and differences, it is now.

Let it be hoped that we will not concern ourselves too much with the mere mechanics of a world organization or focus our discussions upon this or that feature of its framework. It is easy to pick flaws in any scheme of organization, national or international. No group of men, or even of supermen, can hope to devise a scheme which will conform to the desires of all nations, great and small, or which will not offend the sensibilities of some. The conflicting ideologies of today cannot be reconciled in any charter of freedoms. It is enough that whatever plan is inaugurated shall be sufficiently mindful of the realities to make it serve a world that is rather than one which is not.

Realism demands, for example, that the initiative and the dominating leadership in any plan of world organization which hopes to be effective must rest at the outset in the hands of those nations which have accomplished the great task of saving the world from catastrophe. The United States, Great Britain and Russia are the only nations which at the close of this war will have the power and the prestige to provide the rest of the world with collective security. If these three nations hold together,

and work together, they can guarantee that no aggressor nation or group of aggressors shall challenge the preservation of peace for many years to come. If they do not hold together and work together during the years following the close of the war, then no paper guarantees for the maintenance of peace will much avail.

This is a stark reality of the present world situation, and one which in its importance outweighs all the others. To insure that the United Nations shall stay united will require large concessions from all of them, and not least from ourselves; but our willingness to do whatever is required should be in keeping with the magnitude of the disaster which must result if unity fails.

But while the initiative and the leadership in forming a world organization must be supplied by joint action of a few dominating powers, it seems equally clear and essential that the responsibility for the prevention of future aggression must be assumed in the long run by all the peace-loving nations of the earth and not by any single group of them. To this end it is necessary that the world organization shall have an assembly or great council in which all eligible nations are represented, and equally represented. They should have equal representation because all nations, whatever their size or importance, are equal in their rights at international law. A full recognition of this fundamental principle must be the corner-stone of any world organization which sets out to establish and maintain a reign of law and justice among the nations.

One should hasten to point out, however, that there is no inconsistency between equality of rights and inequality of power and influence. Nations, like states, can have a wide disparity in population, resources and prestige while nevertheless maintaining a fundamental equality in all their rights and privileges. In the sisterhood of American states, New York and Rhode Island are far from being equal in stature; but in their rights as states, under the Constitution and the laws, they are on a plane of guaranteed equality. It is to the everlasting credit of those who framed the Constitution of the United States that by a great compromise they succeeded in devising a plan whereby the equality and the inequality of the states could be harmonized in the same structure of federal government. Americans should have no difficulty, therefore, in reconciling themselves to a form of international organization which accords equality of representation to all member nations in one council while denying them this privilege in the other. We have been familiar with that working arrangement for over 150 years.

There remains, however, the most crucial question of all. How shall a world organization, whatever its form, make its decisions effective? This goes to the heart of the whole problem, for no international body can hope to prevent aggression unless it is given the physical power to prevent aggression. The experience of the past thirty years, if it has proved anything, should be enough to demonstrate that neither treaties, covenants, nor solemn pledges of non-aggression suffice to guarantee the preservation of peace when gangster nations set out to take the law into their own hands. If the world is to have a surcease from international banditry during the next generation it will be because we have shown ourselves able to create, somehow or other, the means of promptly and decisively meeting force with force whenever an aggressor nation resorts to force. No realistic view of the world in which we live can lead to any other conclusion.

Participation of the United States in such an international force, moreover, is not a matter of choice but of necessity. Without such participation our adherence to

any form of world organization would be a futile gesture. There will be objection, of course, that to pledge the use of American armed forces in any enterprise not wholly within the discretion of our own government would be to surrender a portion of the national sovereignty. That, to my mind, is merely shadow-boxing with words. If by sovereignty we mean unlimited freedom of action, without any restraint, then no such thing has ever existed in this country, or anywhere else. All governments limit their freedom of action wherever and whenever it is in the national interest to do so. Every treaty that has been made since the establishment of the Republic is in effect a restraint upon the nation's freedom of action.

The danger is, of course, that when the time comes we will not flatly decline to contribute our share to an international force for the preservation of peace under the control of a world security council, but will conjure up such reservations to the use of this force as will make it slow in motion and relatively ineffective for its purpose. To insist, for example, that American armed forces shall never be used to preserve world peace save with the explicit authorization of Congress would be to render our participation subject to weeks and months of debate and delay. It would destroy the capacity for prompt action which is the prime essential of success in all military interventions.

Unhappily the American procedure for the approval of international agreements is such that it lends every encouragement to the strategy of senatorial mutilation. A treaty, whatever its provisions, goes into the Senate with the chances two to one against its emergence in any recognizable form. While it does not seem likely that the Senate of the United States, in the present temper of public opinion, would definitely reject the whole idea of using American armed forces at the behest of a world organization, there is no inconsiderable chance that it would proceed to burden the plan with emasculating reservations.

This danger is what has prompted the suggestion that instead of proceeding by treaty there should be presented to both Houses of Congress a joint resolution declaring the willingness of the United States to participate in an international force for the preservation of world peace and vesting in the executive branch of the government full discretion to authorize the use of American armed forces when the occasion arises. Such action would require only a majority vote in both Houses of Congress instead of a two-thirds vote in one of them. It would have ample precedent for its use since Congress on several notable occasions in the past has done things by joint resolution in preference to proceeding by treaty. The annexation of Texas just a hundred years ago was accomplished by a joint resolution of Congress; so was the annexation of Hawaii in 1898. The Constitution gives the Senate power over the ratification of treaties, it is true; but the Constitution is equally explicit in giving to Congress as a whole the power to take all steps that are necessary and proper for the national defense. So Congress can, if it so chooses, declare the adherence of the United States to a world security organization by means of a joint resolution and there would be definite political advantages in such procedure.

Back in the eighteenth century the 13 newly-independent American colonies became the leaders of civilized mankind by pointing the way to the solution of a great problem which the rest of the world had all but given up. They proved that a group of sovereign states could set up a new government and endow it with powers while yet retaining their own integrity. They demon-

strated to the rest of the world that national strength could be successfully combined with local self-government, religious freedom with a stabilized social order, and free enterprise with civil liberty. May we not hope that America, as we approach the middle of the twentieth century, may once more direct humanity along the paths to international order, justice and peace.

Trout Fishing

(Continued from Page 11)

This man was so good that it was an education in itself to have the privilege of just walking along with him and watching him work. True, he fished but one stream and knew it by heart, but nevertheless, he always seemed to be able to catch the fish.

The author remembers not so much the weight of the contents of his creel after a day's fishing, but rather the riot of color of the wild flowers along a Sierra stream in July; the light pouring down through the October aspens like a stream of liquid gold; rhododendron in bloom in June along the Rondout in the Catskills; azaleas along the Oconalufay in North Carolina; wild blackberries in profusion on the Rogue in Oregon; the fragrance of the pines on a warm summer's day on the bank of the Naches in Washington; beavers at work in the early evening on the Gallatin in Montana; a moose startled by the intruder on the Grayling; a wildcat streaking across an open meadow, and pausing a moment at the edge of the timber for a farewell look, in the high country of New Mexico; the deer drinking from a pool along the crystal waters of the Neversink; a sleek mink scampering across a log on an unnamed stream in Colorado; a band of antelope near the Lost River in Idaho; the sunsets on the Owens River with the Sierras as a backdrop across the meadows; and his once coming face to face with a bear on the Red River of the Adirondacks. These, and countless other memories, are what he cherishes during the long winter months of the closed seasons. The solitude, the peace, the quiet, and the time for reflection are the things that bring the trout fisherman just a little closer to nature than one can get in almost any other sport.

NAVY HONORS ARTHUR H. YOUNG

THE United States Navy recently gave a signal honor to Arthur H. Young, industrial relations consultant of California Institute of Technology and former vice-president of the United States Steel Corp.

At a luncheon ceremony held at the Athenaeum, Mr. Young was presented with a certificate of award for meritorious civilian service to the Navy in connection with the Navy Manpower Survey Board, of which he was the civilian representative for the 11th District. The luncheon was given by the Industrial Relations Section of Caltech, of which Prof. Robert D. Gray is head. Rear Adm. Ralston S. Holmes, U. S. Navy (Ret) presided and the award was presented in behalf of the Secretary of the Navy, James V. Forrestal, by Rear Adm. I. C. Johnson, director of officer procurement for the 11th Naval District.

Mr. Young was praised for his unstinting work with his large experience of a lifetime as one of the nation's top industrial leaders. In addition to the certificate, signed by Secretary Forrestal, a lapel emblem was presented to Mr. Young.