The secret of success is constancy to purpose.
—Benjamin Disraeli

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Man Age

We hear a great deal about the development and improvement of machines and power.

Many people refer to these developments as the "machine age" or "power age." We know that men have conceived the ideas, carried on the research, invented, developed and improved the machines and power and that they are of no value without men to operate them. Every age since primitive man has been a "man age." Improved machines and power are simply small tools that men have devised to help them do a better job.

As our civilization has developed, men have developed themselves through education. They have learned to study through reading, listening, discussing, observing and thinking, so that today the United States is a great powerhouse for generating ideals, ideas, and improved machines and methods for the betterment of mankind.

This powerhouse has brought to the people of the world during the past 120 years more of the comforts and conveniences of life than came during the previous 5,000 years of civilization.

Through cooperation and coordination of effort on the part of American manpower we have developed the know-how which gives us courage to face difficult problems with the firm conviction that we can solve them all in time.

We are now using this know-how in collaboration with the nations who are interested to bring about higher standards of living, a fuller spiritual, material and social life for the people as a whole.

[Signature]
By WILLARD L. THORP
Asst. Secretary of State for Economic Affairs

Our "bold new program" for helping the free peoples of the world "to make the most of their own resources."
Importance to world peace of an increased supply of food, clothing, housing and sanitation in underdeveloped areas.

We have come to realize with increasing clarity during the past few years that quiet and peace in the world depend in substantial part on whether people throughout the world have adequate food, clothing, housing, sanitation and transportation.

We in the United States have taken advantage of the possibilities created by modern science and technology which, combined with an increasing accumulation of capital, have reached levels of productivity permitting our standard of living to rise higher and higher. By a combination of education, skill and ingenuity we have learned how to translate the discoveries of science into greater health and more goods, into those many elements which make up the living standard of an area.

In large parts of Asia, Latin America, the Near East and Africa, millions of people still plow the land, draw water and make their clothing by the same slow methods they have used for centuries. They lack the money, the time and the technical knowledge to improve their methods and thus make the most of their own resources. In recent years, they have become aware of these differences, and the various governments have turned their attention increasingly to the problem of how to improve basic economic conditions.

What is the effect of this situation on today's world? In the underdeveloped areas, low productivity, harsh living conditions and other limitations tend to produce deep dissatisfaction, including an inability to understand the development of the Western world and those unreasoned fears and jealousies which are often the forerunners of nationalism, authoritarianism and war.

In his inaugural address last January, President Truman called for a "bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas."

"Our aim," he declared, "should be to help the free peoples of the world, through their own efforts, to produce more food, more clothing, more materials for housing and more mechanical power to lighten their burdens. We invite other countries to pool their technological resources in this undertaking. . . . This should be a cooperative enterprise in which all nations work together through the United Nations and its specialized agencies wherever practicable. It must be a world-wide effort for the achievement of peace, plenty and freedom."

The President stated the purpose of his "Point IV" program is "to help create the conditions that will lead eventually to personal freedom and happiness for all mankind." Secretary of State Acheson, speaking of the program, has said that it is designed "to make clear in our own country and to all the world that we in the United States have . . . reached levels of productivity permitting our standard of living to rise higher and higher."
the purpose of American life and the purpose of the American system. That purpose is to enable the individual to attain the freedom and dignity, the fullness of life which should be the purpose of all government and of all life on this earth." The essential thing about the program, Mr. Acheson said, is that it is the use of material means to a non-material end.

For the last four months, all the agencies of the government which have had experience in the field of international technical cooperation and economic development have been hard at work examining ways and means for United States participation in a program which would accomplish these aims. They have received the advice and help of many private groups and individuals, and, luckily, there is a considerable back-log of experience on which to build.

Through our many years of developing and carrying on cooperative programs with the other American republics, we have already learned much that will be valuable to us in helping the underdeveloped areas of the world to raise their standards of living. Obviously, a program of such vast scope as the Point IV proposal must be a long-range enterprise and must embrace the efforts of many countries and of experts in many fields of endeavor.

One of the things we have learned is the importance of improving basic health, education and sanitation facilities before attempting to foster advanced techniques in industry and commerce. In areas where 40 per cent or more of the population is suffering from malaria, it is useless to introduce modern machinery and methods until the health of the people has been restored. What can be strikingly helpful, however, are such technological developments as sanitary engineering, modern public health methods and chemicals like DDT applied to the reduction and in some cases the elimination of disease.

Needs in various parts of the world differ. In some areas it is not health measures that are needed as much as modern methods of developing local resources, both natural and human. Education, coupled with the introduction of more advanced technical methods, can result in increasing food production, which in turn can contribute to the health of the population as well as to increased trade and thus to an increased standard of living.

Many of the techniques employed in the cooperative programs in the other American republics are applicable to other areas of the world. A variety of methods adaptable to many different circumstances have been developed for sharing effectively our "know-how" and technical knowledge with other peoples. Some of these are: missions made up of experts who survey, advise or operate projects in other countries; "servicios," the jointly staffed, financed and directed projects in which a public health or other needed program is established within the government of the host country until the local nationals become proficient enough to take it over themselves; and joint cooperative research and experiment centers, laboratories and demonstration stations, like those established by the Rockefeller Foundation and by the Near East Foundation, to carry on work in irrigation, drainage or animal husbandry.

Normally much technical information is exchanged as a result of capital investment, which is itself essential to economic development. Private American concerns doing business abroad have long supplied trained operators, blueprints and a wide variety of technical information to governments and private groups in other countries. Since we in the United States attach great importance to the rôle of private capital in fostering economic development, it is expected that the Point IV program will include, as well as technical cooperation activities, measures to encourage the flow of private capital abroad.

In the field of exchange of persons there are many effective ways of transmitting technical knowledge. On-the-job training in the United States can be offered nationals of other countries; students and professors may be exchanged between countries; technical schools, institutes and universities can be established and aided; and teams of technical experts can be brought to this country, as is being done with groups from Great Britain and other European nations under the European Recovery Program, to observe American methods and procedures.

Other important tech-
Books for a New Countryside

By ROBERT WEST HOWARD
Former Editor, Pathfinder Magazine

The renaissance in rural culture resulting from challenging social, economic and technological problems...Role of bookmobiles, farm organizations and old-fashioned socibles in a "swing toward book-reading."

The farmhouse, 125 years ago, was the heartplace of American culture. Hand-hewn bookshelves held leather-bound "Plays of Aeschylus," Plato's "Republic," histories by Josephus, Gibbon and Irving, the essays of Aristotle and Carlyle. Lyceum halls echoed the earthy truisms of Shakespeare and Chaucer as well as the more environmental advice from Jethro Tull's "Horse Hoeing Husbandry." New villages were named for Cato, Cincinnatus and Homer. Household pets bore the classical names of "Erasmus" and "Demosthenes." It was an age of big dreams and midnight reading.

Again, in 1949, the 60,000,000 people of rural America are staying up late to read books. And, as in the 1820s, this departure from the "early to bed" tradition denotes a period of pioneer change. Its buds are swelling in a dozen regions of our transcontinental 2,000,000,000-acre farm. I have seen them in Ohio, Mississippi, Alabama, Kansas, upstate New York and New England during recent months. They denote, in the opinion of experts, a rural adjustment to the complexities of technologized living and the evolution of a new way of life that will enable the caretakers of our lands and forests to meet the social and economic problems thrust upon them by world conditions.

In the Magnolia State, new bookmobiles of the Mississippi Library Commission are helping to fill the demand for reading matter that "tells us better ways to live." A typical report from Copiah County, in the farm country south of Jackson, states, "The bookmobile left fifty books for eighty pupils. Within a month, the books were checked out 586 times."

From western Kansas comes word of bookmobiles, filled with the latest and best in adult and children books, to tour villages and farms of the region this summer as part of a "Self-Help Caravan" organized to develop support for a program of cultural and economic betterment. "Books and book-reading are going to play a big part in progress out here," says H. W. Hoover, the young newspaperman who is executive secretary of the Western Kansas Develop-
a sort of rocking chair application of town-meeting, with a buffet supper to boot. Each council is composed of ten to twelve families. The monthly meetings shift from home to home across the township. There, for four or five hours, husbands and wives debate the current problems of their infinitely smaller, infinitely more technological world of 1949.

During January and February, each council devoted at least one meeting to a discussion of book needs, centering on a two-page questionnaire sent out from state Farm Bureau headquarters in Columbus. A study of returns from this questionnaire reveals that Ohio farmers not only want "book reviews, reports and discussions at our council meetings" but that hundreds of families are asking for "help from an experienced person on how to read faster and get more out of reading."

Instead of comic books, sordid fiction or rhetoric the survey shows that rural people seek more and better books on contemporary affairs—the "Russian business," state socialism, organic chemistry, human nutrition and, all importantly, "books that will show us how to do things better around the farm and home." High on the list, too, are requests for "clear, simple writing instead of this long-winded technical stuff," "more pictures and illustrations in books" and "better local library service."

Coincidently, the Farm Bureau, the State University, the Grange, the Extension Service and other rural agencies are developing plans for better book-distribution services to Ohio farmers. Ohio State University's School of Education has compiled a new reading list of books for children, "25 cents and up." High school English teachers are paying more attention to book reviews and contemporary literature in classrooms. The American Book Publishers Council is considering plans to establish an experimental fleet of bookmobiles to cover farming areas there this summer, bookmobiles of a new type that will sell, as well as rent, "how to do" non-fiction and "popular sociologicals," plus a selection of the best available children's books.

Carl Hutchinson, the Educational Director in immediate charge of the Advisory Councils' program, is inaugurating lists of "reference readings" to tie in with monthly discussion topics. He hopes to coordinate this with special book displays at village libraries. Also, plans are being studied for the establishment of book-counters in the chain of feed, fertilizer and farm-supply stores operated throughout rural sections of the state by the Farm Bureau.

"There's a tremendous gap," he told me, "between the farmer's current knowledge of this new technology of machine-living and food-for-all-the-world and the information he now has on scientific and social problems. Cultural comprehension of these problems, and their cure, can best be given him through books he can understand . . . and like."

Back in New York, I went to Columbia University for a long talk with Dr. Frank Cyr, Professor of Rural Education at Teachers College. A native Nebraskan and "Father of the School Bus" (THINK, January 1949), Dr. Cyr is thoroughly familiar with the reading problems confronting rural America today. School libraries, he feels, may be one means of solving distribution problems.

"Modern plans for consolidated schools," he explained, "call for far more than the traditional classroom, study hall and gymnasium. They're big, sunny one-story structures holding community recreation centers, a food-canning center, a miniature meat-packing and quick-freeze plant, and a joint library for adult and pupil use in addition to the traditional school facilities."

"Insofar as adult books are concerned, I see no reason why a distribution system couldn't be set up among school agencies that would make it possible for school libraries to take orders for the books rural people wish to buy, as well as maintain loan libraries and reading-consultation services. Certainly, if the school is to fulfill its place as the cultural center of the community, it should provide such facilities."

He pulled open a desk drawer, then, and brought out the annual reports of the American Farm Bureau Federation, the National Grange and the Farmers' Union, their total memberships representing 3,000,000 farm families. "The problem and the solution are right in there," he said. "The index to the 1948 address to the National Grange by its Master, Albert S. Goss, lists forty-five entries. Among them are reciprocal trade, the continental shelf, monetary reform, Communism, world wheat agreements, the Marshall Plan, and knotty questions of parity and price support."

"The annual resolutions of the American Farm Bureau Federation include price level stability, price supports, basing point systems, land and water use, research, labor-management relations, old age and survivors insurance, nutrition and what-have-you. Farmers' Union resolutions and speeches are just as broad. How in the name (Continued on page 31)
Atomic Energy
And the Future

By F. H. SPEDDING
Director, Ames Laboratory and Institute for
Atomic Research, Iowa State College

THE FAR-REACHING scope of probable peacetime applications . . . Opportunities for industry in developing better fuel rods, coolants, moderators and controls.

The invention and use of the atomic bomb had such a dramatic effect on the war that it sharply focused world attention on the fact that science had harnessed a new form of energy for the use of mankind. It is obvious from past history that such a discovery will have profound effects on the development of our future civilization. To realize this, one has only to recall the great changes in civilization which followed the harnessing of fire, gunpowder, steam, electricity and the chemical explosions of the internal combustion engine.

All of the natural forces which mankind has harnessed have been applied to destructive uses and have profoundly influenced warfare. I believe, however, all will agree that this destructive use of these forces is minor in its ultimate impact on civilization compared to the effect of the peacetime developments which took place in an orderly manner over a period of time. I feel, therefore, that it is unfortunate that the first application of atomic energy to enter the average man's consciousness is a destructive application. I also feel that it is unfortunate that the average man, due to the great destructiveness of the atomic bomb, has come to look upon atomic energy as a mysterious thing, a sort of black magic beyond his comprehension. Actually, atomic energy is no more difficult for the average man to comprehend than is the electric motor, the steam engine or the automobile. I feel that he can get a very excellent idea of what atomic energy is, and how it may be applied to certain problems, without having to know all the intricate and complicated details which are difficult to grasp. The average man doesn't understand all the principles of how an automobile operates nor could he build one, but he does have a general idea of how it works and he does not feel that there is anything very mysterious about it.

The period of incubation between the time of the discovery of an energy source and the time when mankind has harnessed it for useful application to everyday living has rapidly diminished as our civilization has become better organized, so that while the development of the harnessing of fire took place over thousands of years, the harnessing of atomic power should be expected to take place in a few decades.

This time-element cannot be completely eliminated since even in our highly industrialized era it takes time to develop applications and to make the new discoveries necessary to make such applications. I expect that for the next twenty years the principal use of atomic energy, except for the bomb, will be in the fields of research where it will be used as a very powerful tool which will stimulate many other lines of inquiry and, by an indirect method, help to develop many new industries. I do not look for the general industrial applications, such as its use for power, to generally occur before twenty years have passed. It will probably be half a century before atomic energy really comes into its own and is put to work on a scale comparable with electricity as it is used today.

The early pioneers in the field of electricity almost certainly had no conception of the many uses to
which we have put this force at the present time. It is true they could conceive of it as a research tool and perhaps could dimly perceive it as a source of light, heat and power, but I am sure that no one of them could envision the discoveries which have now been made, like the telephone, television, radio, photovoltaic cells and such. So it is today with atomic energy. We can visualize the use of atomic energy as a research tool, as a source of power, and in a number of other applications, but I am convinced that the really great applications which it is bound to bring about have not yet been envisioned.

I have given a good deal of thought to the subject of "just what is our atomic secret?" You all know, of course, that it is not a formula which can be readily purloined by a secret agent to be turned over to an enemy. Actually, almost all the fundamental principles and basic knowledge which are needed to understand the operation of an atomic bomb or an atomic power engine were known before the war by scientists of all nations and had been published in scientific journals. Therefore, the real secret of how to produce an atomic bomb or an industrial power plant lies in the extensive scientific and industrial "know-how" which our scientists and engineers possess as part of their heritage and education. The real secret is not in how the bomb or power plant operates but in how to carry these operations out on a large scale so as to make them effective. Every boy who has had high school physics knows the principles of the electric generator but this is a long way from being able to manufacture a 50,000 kilowatt generator such as is used at Niagara Falls.

The basic principles involved in the release of atomic energy are extremely simple. If we wish to release atomic energy either in a bomb or an atomic power reactor we set up a chain reaction. This essentially means that we start a reaction going where each time an atom reacts it gives off products which cause more atoms to react and they in turn cause still others to react until the reaction builds up to whatever size is desired. Ordinary uranium as found in nature consists of mixtures of various isotopes of uranium. These are atoms which behave alike chemically but whose nuclei are constructed differently and therefore have different weights. One of these isotopes, U$^{235}$, has the property that if a neutron comes close to the nucleus it captures the neutron and forms uranium isotope U$^{236}$. This isotope or atom is unstable and in a very short time, in the order of millionths of a second, will explode or fission into two atoms of intermediate atomic weight such as barium and krypton and give off two or more neutrons. These neutrons if they go close to other U$^{235}$ nuclei will cause them in turn to explode so that we see that if we gather together U$^{235}$ atoms it is possible to get a chain reaction going in them. Therefore, if we separate out the pure 235 isotopes of uranium we have the necessary raw material for an atomic bomb.

The problems associated with the design of a power pile are also fields of future opportunity for industry. First consider the fuel rods. Thorium and uranium are the known sources of fissionable materials which are generally available, but a great many problems arise as to how to fabricate these. What shape should they be? Metals which have heretofore been commercially rare may be in demand, and the chemical industries may play an important rôle in producing good metal of these lesser known elements in high purity. The fuel rods do not necessarily have to be metal but may be refractories which have good heat conducting properties, or may be even liquids.

The coolants can be of many types. They might be air, rare gases, metal alloys or organic liquids. Here again, materials which have been slightly too expensive to take hold commercially may become important through their nuclear properties, and new industries for producing them may develop.

The moderators can be of various types, such as graphite, heavy water, beryllium or other light atoms; they also must.
Costume Jewelry

By HOWARD S. RAINS
New England News Dir., Fairchild Publications

Evolution of an industry whose varied products help fill the "basic urge for adornment" . . . "Economic and social repercussions" resulting from application of mass production to jewelry manufacture.

Since the days of Babylon a basic urge for adornment has been a strong characteristic of the human race. Perhaps the costume-jewelry industry has done most to help meet and satisfy the adornment urge for all classes. For today a woman can buy a piece of jewelry for as little as ten cents. And it probably is difficult for the layman to distinguish between a $10 gold-filled item and one made of solid gold. It is the story of progress and mass production.

The exact birthplace of jewelry manufacturing in this country still is a matter of debate. One story has it that a French jeweler, a soldier in Lafayette's army, settled in North Attleboro, Massachusetts, and became the nation's first manufacturing jeweler. Field's history of Rhode Island says that Seril Dodge was the first, that he founded a firm to manufacture silver buckles in Providence in 1775. However, most sources seem to give the credit to Seril Dodge's brother, Nehemiah, who opened a shop in Providence in 1794 to engage in practice as a goldsmith, jeweler and watchmaker.

In any event, jewelry circles think of Providence and the nearby Attleboros as one area. And it is interesting to note that the area which housed the first manufacturing-jewelry establishment ranks today as the most important jewelry-manufacturing area in the country.

The jewelry-manufacturing industry is perhaps the biggest employer in the Attleboros. And in Rhode Island it ranks second to textiles. While by no stretch of the imagination is the jewelry industry a major employer in the country as a whole, its economic and social repercussions are felt throughout the land.

Like most other enterprises, the jewelry industry has traveled along the road of invention and mechanical progress. Thousands of pieces of jewelry can be produced today in less time than it took the jeweler of the early nineteenth century to work one piece by hand. One of the more important developments took place in the latter part of the nineteenth century when rolled gold-plate was evolved. As its name may imply, rolled gold-plate is a metal of which only a very thin layer is gold. The bulk of the material is a base metal, such as brass.

The amount of gold in jewelry may vary, but law requires stampings to be correct. Generally, one-twentihth, 10-karat gold by weight may be stamped gold-filled. Anything less is called gold-plated. In other words, to qualify as gold-filled, a piece of jewelry must be made so that one-twentieth of the article by weight is 10-karat gold or better. Incidentally, the term "solid gold" is ground for suspicion. The article should be properly marked; for example, "10-karat," which means that the article is ten twenty-fourths by weight fine gold.

Obviously, rolled gold-plate is not expensive. Properly polished, jewelry made of this metal offers an attractive appearance at a low price. Thus, the introduction of rolled gold-plate made possible gold-appearing jewelry at a price many people could afford. Of course, jewelry made of brass with no gold layer can also be attractive. But the difference means much to the public.

Following rolled gold-plate came such develop-
Small jewelry pieces being immersed in an electroplating bath for one of the many finishes commonly used in the industry today.

and inventions, plus the use of machines and presses first employed in other fields. In virtually every process the pace of development has been fast. Stamping techniques have seen vast improvement, casting methods have been perfected and the search for better polishing methods continues apace.

With the progress has come sharply increased production and equally sharp lowering of prices. Department stores long ago established jewelry departments, and then the variety chains entered the field. Today the "five and ten" carries a wide variety of jewelry. In fact, most people no longer think of the jewelry store when they want to buy the lowest cost line of jewelry — that selling for $1 or less.

Despite many claims to the contrary, few costume-jewelry firms employ their own designers. Some of the better-known houses, however, are known for their excellent executions, even among the manufacturers of precious jewelry. Some of the smaller firms admittedly "pirate" a great many of their designs. Copying is an art in these establishments. There are some exceptions. One of the medium-sized houses in the Providence area is owned by a former instructor of jewelry design.

Some of the industry's best designers are located in the New York-New Jersey area, which ranks next in importance to Providence-Attleboro. Generally, higher-priced jewelry is made in the New York-New Jersey area. And, of course, most of the larger units in the industry maintain showrooms in New York City.

Many jewelry firms question the wisdom of heavy expenditures for designing. Milady is fickle, the story goes, and a popular design of today is a dud next season. In fact, runs the argument, the appeal of costume jewelry is its low price, which permits the wearer to discard it without misgivings. Another reason why large outlays, either for designing or for promotion, are the exception rather than the rule is that the costume-jewelry manufacturing industry is made up of many small firms. While no statistics are available, there is no doubt that the number of manufacturers employing a thousand persons can be counted on one hand with fingers to spare.

The jewelry-manufacturing industry covers a maze of operations. In addition to the popular pins are earrings, rings, clips, brooches, chains, bracelets and a wide variety of other items. Further, there is a long list of novelties such as compacts, cigarette cases, vanity cases, etc. — all made in a bewildering variety and at varied prices. And then there is men's jewelry — no small item these days. While such lines are not under the heading of costume jewelry, they are considered part and parcel of the industry.

Among the allied fields is the making of findings. These are the parts that go into the making of the jewelry — spring rings, small stampings, ornaments, settings, clasps and the like. Then there are the metal suppliers. Virtually every important silver and brass company maintains offices and/or supply depots in Providence. And there are colorers, enamelers, etc. Also related to the industry are such firms as box manufacturers and display houses.

As for methods of distribution, the split in the jewelry field is becoming wider each day. Only a matter of a decade ago, the vast majority of jewelry manufacturers sold through wholesalers, who in turn sold to the chains and the retailers. Each year finds more manufacturers taking the direct route, skipping the wholesaler and selling directly to the syndicates and retail stores. While the majority of the manufacturers still stick to the wholesaler, current conditions are causing more manufacturers to ponder their distribution methods.

Today the costume jewelry industry is beset by many problems, some of which are those besetting other manufacturers of consumer goods. But there are others, among which are the present 20 per cent tax on retail jewelry sales and a steadily increasing flow of imports.

Meanwhile, the jewelry manufacturers look to greater efficiency, better designs and new products to ensure continued progress.
Scenic Utah — The “Promised Land”

By HAROLD BUTCHER
Feature writer and correspondent

A region of “flaming canyons,” reclaimed desert and fossilized dinosaurs . . . Its natural resources and expanding industries. An enterprising people and their emphasis on production, cooperation and education.

The most exciting feature about Utah, tenth largest state in the Union, has nothing to do with Mormons, or Indians, or its industrial development. Nothing is more exciting than the land itself — the Promised Land, as the Mormons call it. And upon the land all else depends.

In the land of Utah are Archeozoic rocks which, uncovered in many parts of the state, tell something of earth’s story nearly two billion years ago. Fossils in Utah’s rock deposits carry the records of life during the three hundred million years of the Paleozoic Era. The wave action of Mesozoic seas can still be traced in the Ripple Rock of Parley’s Canyon, and 15,000 visitors annually take a look at Dinosaur National Monument, burial ground of the “terrible lizards,” where hundreds of fossilized bones, including twenty-two complete dinosaur skeletons and many fragments, have been found.

It is this awareness of the abyss of time which makes Utah forever fascinating. You can literally tread where dinosaurs have trod. And in incredibly beautiful Bryce Canyon, the Unka timpe-wa-wincepock-ich of the Paiute Indians (“red rocks-standing-like-men-in-a-bowl-shaped-canyon”), you walk amid the sculptured terraces and pinnacles of enormous amphitheatres where there are rocks that go back to the days when mammals first appeared on the face of the earth.

Utah is a land through which the fabulous Rio Colorado flows on its way to the Grand Canyon of Arizona. It is a land of spectacular natural bridges, forested and snow-capped mountains, colorful deserts, fertile valleys and flaming canyons. Here are two national Parks (Zion and Bryce Canyon), nine national monuments (Arches, Capitol Reef, Cedar Breaks, Dinosaur, Hovenweep, Natural Bridges, Rainbow Bridge, Timpanogos and Zion), as well as many miles of practically unexplored wonderlands.

To this region, long before historic times, came the Indians — the basket-makers and cliff-dwellers. Artifacts discovered on Promontory Point at the north end of Great Salt Lake point to a culture that may be 10,000 years old. To this land, in 1776, came a party of Spaniards from Santa Fe, led by two Franciscan friars, Fathers Escalante and Dominguez, seeking a shorter route to Monterey, California. They spent three days with Indians near Utah Lake and then turned southward. To Jim Bridger, trapper, probably goes the honor of discovering Great Salt Lake in 1824. Others trappers explored the land, but it was not until the covered wagons of the Mormons arrived in 1847 that civilization started.

When Brigham Young led his Mormon pioneers from Nauvoo, Illinois — fleeing persecution that had reached its climax in the assassination of Prophet Joseph Smith, founder of the Church of Jesus Christ of Latter Day Saints, and his brother Hyrum, at Carthage, Illinois — Utah was still regarded as an irreclaimable desert. It was a land nobody wanted, hence
ideal for Young and his followers. Young argued that if nobody wanted the land Mormons would be unmolested in living their own lives and practising their religion. To him the land was not a barren waste; it was rich soil that would yield bountiful crops in return for irrigation.

On July 24, 1847, ill with mountain fever, he reached a high spot overlooking the valley of Great Salt Lake; and, when he saw the lake, glistening in the sun, and streams of pure, flowing water, he exclaimed, "This is the place!" To commemorate that historic decision a $300,000 monument was dedicated July 24, 1947, as part of the centennial celebrations which drew visitors from all over the country. Also commemorated by this monument are the pioneers who came earlier — the mountain men, Fathers Escalante and Dominguez and others.

It was the land and its possibilities that attracted Brigham Young. Under his direction, ground in the valley was flooded; plowing and the planting of potatoes and corn followed. Utah farmers introduced the practice of irrigation into modern agriculture and developed dry farming. Water on all streams of the state is public property, and the State Engineer is charged with its distribution.

If Brigham Young, who died in 1877, were to rise from the dead and come back to Utah, he would spend no time in a Rip Van Winkle daze when he saw the changes that had come about in seventy-two years. He would look with satisfaction on Utah's more than 10,000,000 farming acres. He would become vastly complacent upon being told that Utah is the producer of nationally famous celery, tomatoes, peas, onions, eggs, turkeys, cherries, peaches, apples, pears and plums. Remembering how desperately Mormon pioneers needed sugar, it would be highly gratifying to learn that, in a ten-year average harvest of 48,000 acres of beets, the average annual sugar production has been more than 175,000,000 pounds, the average value of the refined product being approximately ten million dollars yearly. And it would be very pleasing to note that Utah occupies a leading place in the country's livestock industry.

One of the many accomplishments of the Mormons is beautiful Salt Lake City at the foot of the Wasatch Mountains. A well-planned city with unusually wide streets, it has the spaciousness of the West, and you can feel the spirit of the West in its people. You are also quite sure it is Mormon because the big attraction of the city is the Mormon Temple, started by Brigham Young, built of granite from Little Cottonwood Canyon. (Only Mormons in good standing are permitted inside.) Non-Mormons comprise about half of the city's population, but the Mormon stamp is clear upon its character. Young's cooperative enterprise, Zion's Cooperative Mercantile Institution, is still going strong with $20,000,000 annual business. The Church owns hotels, the Deseret News, radio station KSL, banks, much real estate; and over the Church's temporal and spiritual empire now presides genial George A. Smith, seventh successor of Prophet Joseph Smith.

When the dream of a transcontinental railroad was finally realized, the Union Pacific, building west from Omaha, and the Central Pacific (now Southern Pacific), building east from Sacramento, met at Promontory, Utah, where two golden spikes and two silver spikes were driven on May 10, 1869. For more than three-quarters of a century Utah has been a state's largest educational institution, Salt Lake City.
major distributing center; railroads and highways have provided quick access to the rest of the continent. To these forms of transportation have now been added airlines—Salt Lake City has four.

Young, always thinking of the land and the creation of green fields, was contemptuous of gold, which was for "the paving of streets." (But the Saints made money selling commodities to the gold-crazed Forty-niners rushing to California.) However, the more useful mineral resources were utilized. The first run of iron in Utah was made in September, 1852, at a plant built west of Cedar City, and the first silver-lead smelter in the Rocky Mountains was operated in 1856 at Stockton, Utah. As early as 1850 the Church knew of gold, silver and copper in the Bingham district, but it remained for non-Mormons to develop these. Men from Fort Douglas, encouraged by General Patrick Connor, went to work on these ores after 1863. Salt Lake Valley today is the world's greatest nonferrous metal smelting district. The Geneva steel plant near Provo, a $200,000,000 installation, by far the largest steel plant in the West, built in 1942-3, has assured continued industrial expansion.

The good Mormon does not drink tea, coffee or alcohol; he does not smoke or chew tobacco. Despite these "Thou shalt nots," life in Utah is far from dull, and the good times are not confined to the "Gentiles" who make up thirty per cent of the state's more than 550,000 population. Mormons have never been afraid of dancing, music and drama; and they not only enjoy the movies but Hollywood frequently shoots Utah scenery in color in the course of movie production.

On that westward trek to the Promised Land from Nauvoo the pioneers forgot the incredible hardships of the journey in many a Virginia reel and Copenhagen jig around the campfire. Early leaders of the Saints were firmly convinced that recreation was essential to the complete life. From the beginning of Utah's history the people have danced. The Utah Centennial Commission organized committees on music, art, drama, pageantry and parades, and county, civic and school groups cooperated throughout the state. In this way thousands of people in the small communities benefited by the cultural activities and the fun. The Utah Symphony, with Werner Janssen as music director and conductor, toured the state. The Tabernacle Choir of Salt Lake City (J. Spencer Cornwall, director) is famous. Every year Brigham Young University at Provo holds a music festival during its summer session. Its orchestra is recognized as one of the finest university orchestras in the nation.

Plays which have run years in New York are produced annually by the Brigham Young University drama department and, more recently, by the new Players' Guild, a community drama organization.

Brigham Young founded Deseret (now Utah) University in Salt Lake City and Brigham Young Academy (now University) in Provo. The Utah State Agricultural College of Logan, founded in 1888, one of America's famous land grant institutions, has contributed immensely to the growth of the West as well as to the nation at large. Education has been stressed from the earliest days of Mormonism. Counties levied school taxes and began collecting in 1852. A state high school tax started in 1911,
and in 1919 the legislature passed an act requiring school attendance until pupils reached the age of eighteen. U. S. Office of Education figures show today more Utahans per 1,000 are graduated from high schools than citizens in any other state. The number of university graduates and those who gain prominence in professional and technical fields is impressive.

One secret of Utah’s success has been cooperation. The “Beehive State” has learned many tricks from the bees. Cooperation grew out of the Mormons’ religion, and it held them together. And cooperation still counts. When pigs were being killed in 1937 to steady a glutted market, when farmers were being subsidized to limit production, the Mormons found the solution in cooperation. They built granaries and storehouses to contain the surplus foods, believing, with Joseph of Egypt, in storing during the fat years against starvation in the lean years to come. Utah businessmen, farmers, laborers, mechanics and bankers developed projects in their spare time to fill the granaries and storehouses. Side by side, they gave time to cultivate the soil and harvest the crops. Consequently, when the call came for food in Europe and Asia, the Mormons were ready to answer the call. Carload after carload of food was shipped to help relieve the world’s suffering millions. Needless to say, no good Mormon is ever allowed to go hungry. He is helped in times of need, and usually he is helped to a job, which saves his morale and maintains the sturdy independence of citizens within a community.

Although Utah is a Mormon state, the major Christian churches are also represented. The first non-Mormon denomination was the Congregationalist, which organized a church in Salt Lake City in 1865. In 1866 the first Catholic Mass was said in Salt Lake City in the Old Tabernacle of the Mormons, but twenty years before that Father Pierre de Smet, S. J., had traveled in the territory, and it was his description of the Rocky Mountains and the Great Salt Lake Valley which influenced Brigham Young to settle there. The Catholic Church operates large and well-equipped hospitals in Salt Lake City and Ogden, the College and Academy of St. Mary-of-the-Wasatch and other schools.

The Episcopalians arrived in Utah in May, 1867. St. Mark’s Cathedral was completed in 1871. St. Mark’s Hospital, one of Salt Lake City’s large hospitals, and Rowland Hall school for girls are run by the Episcopal Church. Presbyterians were among the first settlers of Corinne (1869) and two years later they organized the First Presbyterian Church in Salt Lake City. The Methodists organized in Salt Lake City in 1870. Before the turn of the century Baptists, Lutherans (Continued on page 28)
Wild Turkeys

By ARCHIBALD RUTLEDGE

Author and poet

When the opening gun of hunting season is fired, these astute birds betake themselves into the swamps, but "when the first yellow jasmine begins to hang out its golden bells, then the turkeys will come back."

Within sight, indeed within call, of my house, wild turkeys nest every year. During more than one season I have watched a brooding hen turkey come from her nest into the bowed and brown cotton field for her noontide foraging. I have found nests close to the rail fences that border the home fields. Anyone who has watched a tame turkey’s craft in nesting time—her patient, tedious secretiveness, her gentle self-effacement—will have a very correct idea of the behavior of the wild turkey at such a season.

But, touching and strange to relate, this most wild and astute bird, once on her nest, can be readily approached. For a man to catch a wild turkey on her nest is no difficult task. "Perfect love casteth out fear." Even so, I have seen it with my own eyes.

In due time her brood comes forth, and she knows the mystic and infinite pride of motherhood. She watches with delight the behavior of every one of her helpless little children. She radiates maternal affection and that constant sacrifice that is the chief charm of deep devotion.

I remember watching one day in late spring such a brood in a wild tangle of greenery just beyond a field of young corn. The turkeys had been hatched in an adjacent thicket, a dim, sweet place, where jasmines tossed their showers like golden fountains playing, where smilax rioted over hollies, scrub oaks and myrtles. Shimmering little sunny glades beneath huge pines were here, lonely fair paths beside which the tall wood violets grew.

I was sitting on a stump in a small clump of myrtles when I heard the turkeys approaching. But for the noise they make walking through the leaves and brush, a flock of grown wild turkeys can be singularly silent. But it was not so with these children. I heard a faint elfin piping—flute notes of a quality most delicate, yet almost piercing in their soft sweetness. And for every plaintive or excited call that the little ones gave, the old mother had an instant reassuring answer.

The infants seemed to stray a great deal, running into blind alleys among the deep greenery, getting into dense heaps of leaves and, not being able to extricate themselves handily, lagging behind the flock to gaze about at the great new world into which they had come. Whenever he was in doubt, one of the little wanderers would pause and gaze about for a moment with glistening eyes, finally complaining of his plight in a dulcet treble. The old mother never failed to supply an answering note of comfort. For his dismay, even though childish and imaginary, she was always the solace.

One tiny turkey got his foot caught between a jagged strip of bark and the fallen limb to which it clung. He tugged manfully, his gleaming feathers fluffily dishevelled, but the grip hurt his ankle. He complained. Instantly the old mother went to him, looked carefully at the situation, drove her black beak at the offending bark, and so freed the tiny captive. I shall never forget with what delicate abandon and grace that little wild thing fled joyously down the sun-flecked pathway toward its companions, its tiny wings held up, its feet twinking, its faint pipings sounding on the still forest air with pathetically down the sun-flecked pathway toward its companions, its tiny wings held up, its feet twinking, its faint pipings sounding on the still forest air with pathetic, winsome charm—as if a child of Titania herself were taking music lessons on a fairy flute.

They love their home woods—these wild birds, the noblest, I think, in all the world, and certainly one of the most splendid in our own country. They follow a certain routine every year which, when understood, proves their attachment for the place where they are born.

Near the old hearthstone they live until the first gun of the hunting season is fired. Then, with admirable sagacity, they betake themselves across the river into the mysterious fastness of a mouldering swamp. There they stay as long as the sportsman is abroad in the land.

But during all those months they do not forget home. When the first bull alligator begins to moan his profound and ludicrous love lyric; when the first yellow jasmine begins to hang out its golden bells; when the first warm, cloudy weather sets the frog chorals going, then the turkeys will come back, their ranks thinned, perhaps, but all of them wiser and warier birds. But no fear will ever keep them from the old home woods. The flock will break up. Mating will begin. And the great cycle of life will once more begin.
"Problem of Women in Art"

A policy of trying to relate the power of "what is considered normal for any woman, a domestic life including husband and children. It is perhaps this decision which makes the work of women of particular interest. The stimulus which they choose determines the quality of their production.

Of the fifty-seventh annual exhibition of the National Association of Women Artists, held recently at the National Academy Galleries in New York City, the president of the Association, Mrs. Grace Treadwell, observes: "The problem of women in the creative fields has been made somewhat easier by scientific appliances which reduced domestic labor and by the generous attitude of American men who are proud to have their women obtain artistic honors. "But women, in order to be articulate, must decide either to dedicate their lives completely to art or to live what is considered normal for any woman, a domestic life including husband and children. It is perhaps this decision which makes the work of women of particular interest. The stimulus which they choose determines the quality of their production.
"It is increasingly the policy of our organization to try to relate the power of what is best in art to other fields of endeavor, making contacts with civic and international fields. It has also emphasized the important place that art should take in the world scheme of today. In this connection we have sent traveling print shows and traveling water-color shows to the best museums and exhibition centers both in the United States and Europe. These have included England, Italy, France and South America, and recently an important water-color exhibition began a long tour in Canada."

In the showing at the National Academy Galleries there were few if any extremes in the various media undertaken. The paintings ranged from what is known as "academic" and "representational" to "abstractionism" and "expressionism."

In this, the largest group of women artists in the United States, and also one of the oldest, there are more than 800 members registered in the various media, including oils, water colors, miniatures, prints and sculpture. There were some 350 exhibits in the show.
"A Primrose By a River's Brim"

By REV. EDWARD KUHLMANN
Good Hope Lutheran Church, Oil City, Pa.

"The whisper of God is still in growing things and a garden"...Interpretors of "great truths that underlie the kingdom not of this world."

A primrose was to him, and it was nothing more.

Is it more to you? The pansy that looks up at you so wistfully as if it had a secret to confide; the flowers that throw their shapely shadows across your garden path; the little plants, just coming up, that lift their saucy heads above their winter's bed of leaves, like children pushing back the covers of the night to say good-morning; and by the garden gate the "tree that looks at God all day and lifts her leafy arms to pray"—are they just things to you and "nothing more"?

They were infinitely more to the Master as He walked the pathways of men. How wonderfully He took them, "root and all and all in all"—as Tennyson puts it—and made them tell of God. The thistles and the lilies of the field, the seed that was scattered from the sower's hand, the fig tree that failed of fruit, and the mustard plant that sheltered the singing hosts of birds—by the magic of His touch they became interpreters of their Creator. To those who walked in Galilee with Him He made them speak with infinite charm of the great truths that underlie the kingdom not of this world.

The whisper of God is still in growing things; and a garden—even your garden—may be a Galilee with Him, where He would walk with you. He would walk with you there as once He walked in Eden's garden "in the cool of the day." He would talk to you there as He talked to Mary in the garden of the tomb at the first Easter's dawning.

Hold rendezvous there with God. Find Him ever anew in all the wonder and beauty of plant and soil and seed, for it is wonderfully true that

One is nearer God's heart in a garden Than anywhere else on earth.

When you swing your garden's gate ajar, do it with reverence as when going to a tryst with a friend, for you really are—the "friend that sticketh closer than a brother."

Do I hear the scoffer's voice: I do not find God in my garden. I see flowers and, perchance, some weeds—but not God. I hear the twittering of the birds and the hum of bees—but not God. But He is there just the same if you have the eyes to see. Walk with me into your garden and together we will find Him, you and I.

Yonder I see a slender vine entwine itself about the sturdy trunk of a friendly tree. Like little hands its tendrils reach up to find support. Sensing its own weakness, it seeks another's strength to lift itself to heights it cannot reach alone. Insensate soul, can you not see that thereby God would say to you that your littleness may become strength if the tendrils of your faith will lay hold of Him, making true for you the singer's words, "Other refuge have I none, hangs my helpless soul on Thee"?

The wind that gently caresses your cheek—see how it lays hold of the top of yonder dandelion, scattering its silken threads! Each thread is a wing of gossamer for a pendant seed, and oftentimes it flies it far to plant a weed in some one else's garden. Insensate soul, does not God thereby come preaching to you that "the evil that men do lives after them" and that you must stand guard over all you say and do lest you exert influences of evil upon the lives of others, planting the weeds and brambles of wrong in the garden of their hearts?

And that blossom yonder, that turns its face to the sun throughout all the day, from the mists of morning to the lengthening shadows of approaching night! Does it not subtly summon you to turn toward God, that you might have life and that you might have it more abundantly?

Go often, therefore, into your garden, for

A garden is a lovesome thing, God wot! Rose plot, Fringed pool, Fern'd grot— The veriest school Of peace; and yet the fool Contends that God is not — Not God in gardens when the eve is cool? Nay, but I have a sign; 'Tis very sure God walks in mine.

THINK
The Lesson of History
(From The Science of History by James Anthony Froude)

James Anthony Froude (1818-1894), English historian, was educated at Oxford. He took deacon’s orders, but later became connected with the Oxford movement, finally resigning from it and devoting himself to writing and lecturing. In 1892 he was named regius professor of modern history at Oxford. Froude produced an incredible number of historical works, chiefly on England, as well as several biographies and volumes of essays, including his well-known Short Studies on Great Subjects.—Ed.

ONE LESSON, and only one, history may be said to repeat with distinctness: that the world is built somehow on moral foundations; that, in the long run, it is well with the good; in the long run, it is ill with the wicked.

But this is no science; it is no more than the old doctrine taught long ago by the Hebrew prophets. The theories of M. Comte and his disciples advance us, after all, not a step beyond the trodden and familiar ground. If men are not entirely animals, they are at least half animals, and are subject in this aspect of them to the conditions of animals. So far as those parts of man’s doings are concerned, which neither have, nor need have, anything moral about them, so far the laws of him are calculable. There are laws for his digestion, and laws of the means by which his digestive organs are supplied with matter. But pass beyond them, and where are we? In a world where it would be as easy to calculate men’s actions by laws like those of positive philosophy as to measure the orbit of Neptune with a footrule or weigh Sirius in a grocer’s scale.

And it is not difficult to see why this should be. The first principle on which the theory of a science of history can be plausibly argued is that all actions whatsoever arise from self-interest. It may be enlightened self-interest, it may be unenlightened; but it is assumed as an axiom that every man, in whatever he does, is aiming at something which he considers will promote his happiness. His conduct is not determined by his will; it is determined by the object of his desire...

Now, that which especially distinguishes a high order of man from a low order of man—that which constitutes human goodness, human greatness, human nobleness—is surely not the degree of enlightenment with which men pursue their own advantage: but it is self-forgetfulness; it is self-sacrifice; it is the disregard of personal pleasure, personal indulgence, personal advantages remote or present, because some other line of conduct is more right.

We are sometimes told that this is but another way of expressing the same thing; that, when a man prefers doing what is right, it is only because to do right gives him a higher satisfaction. It appears to me, on the contrary, to be a difference in the very heart and nature of things. The martyr goes to the stake, the patriot to the scaffold, not with a view to any future reward to themselves, but because it is a glory to fling away their lives for truth and freedom. And so through all phases of existence, to the smallest details of common life, the beautiful character is the unselfish character. Those whom we most love and admire are those to whom the thought of self seems never to occur; who do simply and with no ulterior aim—with no thought whether it will be pleasant to themselves or unpleasant—that which is good and right and generous.

Is this still selfishness, only more enlightened? I do not think so. The essence of true nobility is neglect of self. Let the thought of self pass in, and the beauty of a great action is gone, like the bloom from a soiled flower. Surely it is a paradox to speak of the self-interest of a martyr who dies for a cause the triumph of which he will never enjoy; and the greatest of that great company in all ages would have done what they did had their personal prospects closed with the grave.

Nay, there have been those so zealous for some glorious principle as to wish themselves blotted out of the book of Heaven if the cause of Heaven could succeed.

And out of this mysterious quality, whatever it be, arise the higher relations of human life, the higher modes of human obligation. Kant, the philosopher, used to say that there were two things which overwhelmed him with awe as he thought of them. One was the star-sown deep of space, without limit and without end; the other was right and wrong. Right, the sacrifice of self to good; wrong, the sacrifice of good to self—not graduated objects of desire, to which we are determined by the degrees of our knowledge, but wide asunder as pole and pole, as light and darkness; one the object of infinite love; the other the object of infinite detestation and scorn.
PERSONALITIES IN THE NEWS


U. S. officials in Paris for Big Four meeting. L. to r.: Chas. Bohlen, State Dept.; Dean Acheson, Sec. of State; Philip Jessup, Amb.-at-large; John F. Dulles, Adviser.

Madame Vijaya Lakshmi Pandit of India, first woman Ambass. to the U. S.

Gen. Lucius D. Clay, retired military governor of Germany, and political adviser, Robert Murphy, honored at parade in New York.

Francis P. Matthews of Omaha, Neb., new Secretary of the Navy.

John J. McCloy, first U. S. High Commissioner to Germany.

Franklin D. Roosevelt, Jr., winner of special Congressional election in New York.

Eugene R. Black, who succeeds Mr. McCloy as head of International Bank.
HORIZONS

You cannot build character and courage by taking away man's initiative and independence.

—ABRAHAM LINCOLN

EDUCATION: The growing conviction that local communities must be encouraged to solve their own educational problems instead of looking to Washington for help has brought into being the National Citizens' Commission for the Public Schools. Although professional educators will not be invited to membership, the commission will have the technical services of a full-time educational consultant who, together with an advisory board of educators, will gather necessary information. The commission, headed by Roy E. Larsen, president of Time, Inc., consists at present of twenty-eight prominent laymen in business, labor, law and publishing and will be expanded to sixty members. Community cooperation, according to Mr. Larsen, will be the main objective. The commission will not attempt to direct whatever school reforms may be needed. It hopes that when school problems are brought clearly to the attention of the various communities the latter will be encouraged to solve them without appealing to Washington for help. At present the commission is looking to a six-year program. Initial financial support has been obtained from the Carnegie Corporation and the General Education Board. The commission estimates that it will have about $250,000 annually for its work. It recognizes that, regardless of the amount of Federal or state aid granted to local communities, citizens in every town and city must be principally responsible for the progress of their public schools. “As things stand now,” Mr. Larsen is quoted as saying, “many school boards are in a position where they must first find out how much money they can spend, and then decide what the quality of education offered in their schools will be. We believe this process is in reverse. We must all decide first the results we want from our public schools, and then we must begin at once to take the necessary steps to obtain them.” Many educators believe that the commission can play a significant role in the solving of educational problems.

TRIUMPHS: The dramatic success of the synthesized adrenal hormone in enabling rheumatoid arthritis cripples to walk again, which was announced last month, became the center of attention at subsequent sessions in New York of the Seventh International Congress on Rheumatoid Diseases. Known until now as “Compound E,” it has been named by its discoverer, Dr. Edward C. Kendall, chemist of the Mayo Clinic, as “cortisone,” an abbreviation of a long chemical formula. It was first announced at these sessions in New York that in addition to its spectacular relief in the case of crippled victims of rheumatoid arthritis, to which attention was called in the May issue of THINK, cortisone has also produced similar effects on the disabling type of arthritis which makes the back as stiff as a board. It was reported, too, that success had been achieved in the case of three rheumatic fever victims, a disease of the young responsible for more than a third of all the deaths from heart disease and thus more than those who are killed annually by cancer. Dr. Philip S. Hench, an associate of Dr. Kendall at the Mayo Clinic, as "cortisone," an abbreviation of a long chemical formula. It was first announced at these sessions in New York that in addition to its spectacular relief in the case of crippled victims of rheumatoid arthritis, to which attention was called in the May issue of THINK, cortisone has also produced similar effects on the disabling type of arthritis which makes the back as stiff as a board. It was reported, too, that success had been achieved in the case of three rheumatic fever victims, a disease of the young responsible for more than a third of all the deaths from heart disease and thus more than those who are killed annually by cancer. Dr. Philip S. 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Clinic, stated that cortisone had produced striking results on the form of arthritis which frequently accompanies psoriasis, described as a painful and generally incurable skin disease. Cortisone was also discussed by several other doctors. It was characterized by Dr. Edward F. Rosenberg, of the Michael Reese Hospital, Chicago, as "one of the most significant discoveries of our generation."

**STORMS:** Radar warnings of thunderstorms at least thirty minutes in advance will enable airlines, ships and electric light companies in New York City to make proper preparations this summer as a result of plans which were announced at the meeting of the American Meteorological Society.

Coast Guard cutter Tampa towing the Chincoteague in 1,000-mile test to determine durability of nylon hawser.

**RUBBER:** Early development of 75,000-mile tires is forecast by one of the nation's leading authorities on synthetic rubber, Dr. Charles P. Fryling, of the Phillips Petroleum Company, Phillips, Texas. This will mean, he said at the recent meeting of chemists at the Massachusetts Institute of Technology, that they will last eight years for the person who drives his car between 9,000 and 10,000 miles a year. This great increase in the life span of rubber is predicted as a result of improvements being made in a new material known as cold rubber, produced at about freezing temperature. The cold rubber Dr. Fryling characterized as stronger and tougher than ordinary synthetic rubber of the type called GR-S, and it outwears even natural rubber. "Before the year is over a production capacity of 200,000 tons of cold rubber will have been made available by the Office of Rubber Reserve." Chemists, he explained, who worked during the war on GR-S, which was prepared in heated vats, realized that a better material could be obtained through a low-temperature process, but they had no chance to experiment. The new catalysts which have since been used have also reduced the cost of the synthetic rubber, he said, because faster reactions with reduced overhead costs are now possible, and also less pure raw materials can be employed.

**LIGHT:** The restorative effect of ordinary light as a hitherto unknown phenomenon of radiation which may have far-reaching implications was reported recently to the National Academy of Sciences, in Washington, D. C. According to experiments by Dr. Albert Kelner, of the Carnegie Institution of Washington, molds, bacteria and the like are killed or lose their ability to reproduce when irradiated with ultraviolet light. It was found that there was practically no recovery when the organisms were kept in the dark and that the invisible ultraviolet rays in some way disrupt the vital process of single-celled organisms, which are said to be comparable to the cells composing the bodies.
of higher animals that reproduce in essentially the same way. Some quality in visible light was found to restore the vital organization. This powerful action of light, said Dr. Kelner, holds out the hope that further study "may lead to discovery of factors causing similar recovery from X-irradiation or irradiation from radioactive materials."

GRANTS: Establishment of 305 scholarships and grants for American students to study and teach in France has been announced by the Board of Foreign Scholarships, acting under the Fulbright Foreign Study Exchange plan. The board, when conducting its annual meeting in Cleveland, stated that 250 of the grants would be for graduate scholarships, forty-five for Americans serving as visiting professors and advanced and research students and ten for travel abroad by primary and secondary school teachers. These awards will be the first offered for French study and teaching under the Fulbright law authorizing the State Department to use certain foreign currencies and credits acquired through the sale of surplus property abroad. Agreements have been signed with China, Burma, Greece, the Philippines, New Zealand, Belgium, Luxembourg, United Kingdom, France and Italy with the program ultimately to embrace more than twenty countries with an expenditure of $140,000,000 in foreign currencies during the next twenty years. Dr. Milton S. Eisenhower, President of Kansas State College and Chairman of the Second Conference of the United States Commission for the United Nations Educational, Scientific and Cultural Organization, described the commission as a "catalytic agent" for encouraging organizations representing 40,000,000 peace-seeking persons who must take "the problems of attaining peace into their own hands."

UNDERSTANDING: "More and more it is coming to be understood," says Chester I. Barnard, successor to Dr. Raymond B. Fosdick, in his first annual report as president of the Rockefeller Foundation, "how fundamental the faults and limitations of communication are to the ills of society. Misunderstandings and lack of understanding breed fears and hostilities in even small and intimate groups. Conversely, good understanding based upon intelligible communication is the first step toward cooperation." "About half the world's population is close to starvation and another quarter suffers from malnutrition," he states, citing the Foundation's cooperation with certain governments. Thus its work in Mexico to improve the corn yield, its large-scale effort to eradicate malaria on the island of Sardinia and its projects for improving living standards in Crete. In Europe the Foundation is striving to reopen channels of communication closed by the war or pre-war conditions.

EGGS: Development of a technique by which eggs can be kept fresh indefinitely was reported to the American Association for the Advancement of Science at its recent meeting by Dr. Socrates A. Kaloyereas, Greek scientist now at the University of Louisiana. This is a method of freezing eggs without breaking their shells. Normally the expansion of water in the egg causes the breakage and also changes the internal composition of the egg itself. The freezing by the new process takes place after a preliminary treatment to reduce the amount of water in the egg, and the yolk, he said, freezes first. The treatment, the scientist reported, "does not affect the quality of the eggs at all, except that the whipping quality of the white is somewhat improved."
"Bound to Pens"

The life and accomplishments of the ever-popular Charles Dickens as told anew in the work of a talented biographer.

Men have been chained to hideous walls...but few have known such suffering and bitterness...as those who have been bound to pens." This was the spirit of complete devotion, as described by Charles Dickens, with which he peopled the world of his imagination.

"You can’t imagine how exhausted I am," he said. "All night I have been pursued by (Little Nell)... The anguish is unspeakable." He was referring, of course, to the Little Nell of "The Old Curiosity Shop" who, to the tragic end, was seeking a safe retreat for herself and her grandfather, the poor victim of gambling. "I am...nearly dead with work and grief for the loss of my child."

The life and accomplishments of the ever-popular English writer are told anew in "Dickens: His Character, Comedy and Career" (New York: Harper and Brothers), by Hesketh Pearson, the British biographer who has also to his credit works on Shakespeare, Gilbert and Sullivan, Wilde, Shaw and other noted subjects.

* * *

Dickens’s own life was quite as extraordinary and varied as the creatures of his imagination. His father, who was the son of a butcher, had a clerkship in the Navy Pay Office. He was kindly and improvident and at length was thrown into Marshalsea prison for debt.

Thereupon Charles, aged twelve, went to work in a blacking warehouse. This circumstance is reflected in "David Copperfield," where David’s stepfather, after the mother’s death, puts him out as a chore boy in a bottling establishment from which he receives a bare living. It is also reflected in the story of "Little Dorrit," in which the girl is the daughter of a man who has been confined for debt in prison so many years that he is known as the "Father of Marshalsea."

Dickens had married very young into a large family of sisters. Catherine Hogarth, whom he wedded, bore him ten children, only to be dismissed on an allowance of £600 a year. Her sister Georgina remained many years in Dickens’s home as an intellectual companion and housekeeper until his death. There was also in the middle years his romance with the actress Ellen Ternan of whom there is some reflection in "Great Expectations," "Our Mutual Friend" and "Edwin Drood."

From Dickens’s first American tour at the age of thirty came the American chapters in "Martin Chuzzlewit," in which characters comment on the "queer-looking" people in New York and in which a prospecting expedition to a Western town ends not on the shores of a beautiful lake as contemplated, but in a dreary swamp. Dickens could not forgive Americans for being so devoted to his writings and yet being unwilling to pay royalties.

In Boston it is said that his loud clothes, such as a scarlet waistcoat with applegreen trousers, failed to make a favorable impression. His manners also were called flamboyant. On his second visit to this country, a quarter of a century later, the popular reception given to him was said to be rapturous. By that time his great versatility was generally recognized.

His rise to fame had been sudden and spectacular. In his twenty-second year he had written "Sketches by Boz," which failed to show promise of great things to come, yet in the following year appeared the memorable Pickwickian figures. In addition to his famous novels, Dickens wrote plays, edited successful magazines, founded a newspaper, was engaged in amateur theatricals and was himself a natural and impressive actor. A many-sided person, he was able to create his great galaxy of persons from traits and mannerisms he had seen in real people.

* * *

In the last ten years of his life Dickens produced only two completed novels. By that time he had developed public readings from his works to the point where they had become almost a second profession. He gave performances from his works which left vast crowds drenched in tears and fainting with excitement.

He was an excellent mime and had almost as many voices as he had characters. Often after presenting a program of dramatic readings, he would sink to the floor offstage exhausted. The strain of his reading tours of England and America finally told. He died on June 9, 1870.

Dickens, Mr. Pearson says, was an individualist in politics. He "found life an amusing and thrilling experience and did not feel it would be improved by the adoption of any political creed...He was an instinctive rebel." In religion, too, although he was devoutly Christian, he did not feel entirely at home in any organized church. At heart a humanitarian, he had an ardor for reform and made blistering attacks upon the evils and imbecilities of his day.
THOUGHTS

It doesn't matter as to the size of your garden. It may be only a window-box in a single room. But, if growing from that soil is something of you—your patience, your interests, your love, and perhaps a touch of your faith in God, in the goodness of mankind, and a cheerful helpfulness—your heritage should be that of a healthy, happy human being.

—GEORGE M. ADAMS

There is no reader so parochial as the one who reads none but this morning's books. Books are not rolls, to be devoured only when they are hot and fresh. A good book retains its interior heat and will warm a generation yet unborn.

—CLIFTON FADIMAN

Associate with men of judgment, for judgment is found in conversation, and we make another man's judgment ours by frequenting his company.

—THOMAS FULLER

Whatever crushes individuality is despotism, by whatever name it may be called.

—JOHN STUART MILL

By patience and determination, rather than by a harsh upsetting of tradition, we move toward our national aspirations... This is the way we get things done in America. One man tells another, does what he can, till the sum of these efforts grows into a national aspiration—a precious goal. Then occurs our miracle of democracy: because the groundwork has been surely laid, the goal is already within our grasp.

—NEWTON B. DRURY

Despite world unrest, the frontiers of the future lie invitingly before us. They stretch to fabulous horizons of scientific and technological discovery—all bolding promise of contribution to the national welfare. But these frontiers of tomorrow call for bold enterprise—for optimism, for the united effort of industry, labor, agriculture and government. In the mounting miracles of science, in the rapid advances of technology, lie the foundations for almost countless new industries and for far swifter social progress. This promise of progress is daily taking more definite shape and clearer form, as it shakes free of the post-war mists.

—EARL O. SHREVE

With closer political and economic understanding among the free peoples of the world may come a great upsurge of the forces of democracy. The consequence could be electric. Democracy, founded upon the deep desires and will of the great masses of mankind, is an unconquerable force.

—FRANCIS B. SAYRE

We sometimes say that "money talks." To be sure it does. Get to know two things about a man—how he earns his money and how he spends it—and you have the clue to his character, for you have a searchlight that shows up the innermost recesses of his soul.

—REV. ROBERT J. McCracken

Nations are more and more convinced that their fates are closely bound together, that their salvation and their welfare can no longer be based upon an egotistical and aggressive nationalism, but must rest upon the progressive application of human solidarity.

—ROBERT SCHUMAN

It is easier to fight for one's principles than to live up to them.

—ALFRED ADLER

The humanities of business in this age have become more important than the techniques of business. Each business and industry has to sweep the public misunderstandings and the false notions off its own front walk. Thus will a pathway be cleared for popular appreciation of the important rôle of business in our freedom and in our way of life.

—HARRY A. BULLIS

The teaching of any science, for purposes of liberal education, without linking it with social progress and teaching its social significance, is a crime against the student mind. It is like teaching a child how to pronounce words but not what they mean.

—VERNON CARTER

It is the duty of citizenship not only to understand one's neighbors, but to make oneself understood by them.

—BENSON FORD

The office of the scholar is to cheer, to raise and to guide men by showing them facts amidst appearances.

—RALPH WALDO EMERSON

Laws just or unjust may govern men's actions. Tyrannies may restrain or regulate their words. The machinery of propaganda may pack their minds with falsehood and deny them truth for many generations of time. But the soul of man thus held in trance or frozen in a long night can be awakened by a spark coming from God knows where and in a moment the whole structure of lies and oppression is on trial for its life.

—WINSTON CHURCHILL
Puppets have been the playthings and the delight of youth and age down the centuries. Greeks of the fifth century B.C., when their great masterpieces of drama were not far in the offing, were familiar with the puppet show; and in Java, China and Japan it was almost immemorial.

Paul McPharlin, who died nearly a year ago, was a specialist in this art form. He organized two national exhibitions of puppets and the first national puppet conference, out of which grew the Puppeteers of America, a society with membership in the United States, Canada, Mexico and the South American countries. His exhaustive volume "The Puppet Theatre in America: A History, 1524 to Now" (New York: Harper and Bros.) now sees the light—the index and certain other details having been done by his widow.

* * *

What is the difference between a puppet and a marionette? The author explains that there is no real difference, puppet being derived from pupa, Latin for "girl" or "doll" or "small creature," the "et" making it still further diminutive. Similarly, the marionette, of Italian-French origin, means "little little Mary."

The first puppets in America are said to antedate history. When the Mexicans arrived they found that the Toltecs had puppets. No one knows whence they came. The Iroquois had puppets in the East and the Haidas in the Northwest. Incidentally, "stout Cortés, when with eagle eyes he stared at the Pacific" had a puppeteer in his troop who was probably the first white player in the Western world. "Puppets," says the author, "have always been in the vanguard as the theatre has followed explorers to the frontiers of America." And with the coming of the eighteenth century there were permanently housed puppet theatres in Spanish, French and English America.

On December 30, 1742, this advertisement appeared in the Pennsylvania Gazette: "At the sign of the Coach and Horses, against the State House, in Chestnut Street, Philadelphia, every evening, at seven o'clock precisely, will be acted, in several scenes, viz. An agreeable comedy or tragedy, by changeable figures of two feet high. A sight of the sea and ships. A merry dialogue between Punch and Joan (Judy) his wife. With several other pleasing entertainments. The prices, two shillings, eighteen pence, and sixpence."

Some thirty years later George Washington, while visiting in Williamsburg, noted in his account book an outlay of eleven shillings, six pence, for seeing a "puppet shew." His guests are not mentioned. The reader is reminded that from the sixteenth to the end of the eighteenth century puppet shows gained in popularity on the Continent and in England, mention of them occurring in Shakespeare, Ben Jonson, Pope and Addison.

* * *

It is not surprising that Quebec, looking back to France, which had many fixed puppet theatres during the eighteenth century, should have developed one of its own. It became famous with Daddy Marselle as its puppeteer. He died in 1790. He had "received his sobriquet because of the city of his origin."

In the first half of the nineteenth century the prevailing form of puppeteering in the United States was the variety show "done with string-puppets, abounding in acrobatics, dancing and transformations." Little by little they were used in the "mimicry of the minstrel show, spectacular extravaganza and vaudeville of the big stage." Those that enjoyed these shows were a cross section of the public, both children and adults. Special entertainments for children are said to be a comparatively recent development.

In the last decade of the nineteenth century large numbers of Italians coming to the United States from Naples, Calabria and Sicily brought with them their characteristic form of puppet theatre. They improvised playhouses in lofts, outbuildings and vacant stores in the crowded sections of the cities where they settled.

* * *

A vivid description is furnished of one of these theatres, in Brooklyn, in an old barn with rough plank seats. "The plot thickens. Fighting men in armor enter. Christians on one side, Saracens on the other. . . . The warriors fall to and belabor each other with clatter of metal on metal and resounding thuds on wooden heads. . . . Soon the stage is a shambles, with splintered corpses piling high." Here is a graphic reminiscence of the medieval battle between the Christians and the Saracens cherished all these centuries by these Italian immigrants and their forebears.

In more recent times, in 1914, Remo Bufano, a younger with vivid impressions of Paladin puppets, had put on his own version of "Orlando Furioso" in Richmond Hill House, in New York City. Growing up, he became a professional puppeteer much in demand. In Italy Gordon Craig, son of Ellen Terry, had experimented with puppets from 1907. Meanwhile, Tony Sarg, an illustrator, who had come to New York from London, won so much success with puppets in the Greenwich Village section of New York that he developed traveling companies of puppeteers which attracted much favorable attention to this traditional dramatic type.

It is interesting to note that television has added another means by which the art of puppetry can be brought before the public.
New York's Civic Opera

By ANN M. LINGG
Author of Mozart—Genius of Harmony

Year's repertory enriched by revivals and world première...Company's first Chicago visit significant of future possibilities.

After entrenching itself firmly in the musical life of New York, the five-year-old civic opera company has now established a foothold in Chicago, the nation's second largest city.

One of our liveliest music centers, Chicago had its own opera for many years. Artistic standards at times were said to be above even those of New York's Metropolitan, but record deficits ultimately discouraged the most generous sponsors. Left without an opera, Chicago fans began to look toward New York where the City Center managed to give good performances at comparatively small losses.

In September, 1948, a committee of fifty-four prominent Chicagoans, headed by Mayor Kennelly and Bentley G. McCloud, President of the First National Bank of Chicago, met with the City Center's musical director Laszlo Halasz and Morton Baum, its chairman. It was agreed that the New York company should repeat its season in Chicago, where a similar organization might be set up later on to pool artistic and administrative resources with New York. The $100,000 trust fund of the Chicago Music Foundation would take care of promotion and new scenery, and the General Finance Corporation, which owns the Chicago Civic Opera House, offered certain financial guarantees.

On December 1, 1948, Strauss' Salome, under Halasz's direction and with the brilliant Brenda Lewis in the title part, opened the company's first Chicago season. The schedule included other rarely heard works, such as Tchaikovsky's Eugen Onegin, Debussy's Pelléas et Mélisande, and two Mozart operas. Eighteen performances drew a total attendance of 50,000. The small deficit of $7,000 was attributed to the slump in the entertainment business during Christmas shopping time.

The 1949 season will be longer and further removed from Christmas, and it will include Chicago home-grown talent as an important step toward realization of the ambitious long-range plans. In New York, the City Center's opera budget continues to be balanced by income from lucrative off-season runs of ballet and drama. Mr. Halasz, whose business sense is by no means inferior to his musical prowess, chooses his associates wisely and manages to sign up excellent musicians at small fees. His impressive roster of performers included among its newcomers the dramatic soprano Leona Scheunemann, the bass-baritones Marko Rothmueller and Oscar Natzka, and, last but not least, two badly needed young tenors for the French wing, Robert Rouseville and Frans Vroons.

As a conductor, Mr. Halasz shared responsibility with Joseph Rosenstock who was a highly reputed opera conductor in pre-Hitler Germany, and France's Jean-Paul Morel who also teaches at the Juilliard School of Music. Four revivals and a world première enriched the repertory during the last year. Among the former, Offenbach's The Tales of Hoffmann led in the critics' praise and in audience popularity, with Mozart's The Marriage of Figaro a close runner-up. The other revivals were Verdi's Aida and Menotti's The Medium. The new work was The Troubled Island by William Grant Still, Negro composer.

The action of this new opera is laid in Haiti around 1800, when a slaves' uprising overthrew the French military régime. The central figure is Jean-Jacques Dessalines, a slave leader turning tyrant and falling victim to a conspiracy between his fickle mulatto mistress and a treacherous general.

The music to the sophisticated verse by the Negro poet and lecturer Langston Hughes is highlighted by passages of sweeping jazz or languid spirituals, for which dances and ensembles of the natives provide ample opportunity. The rest is pleasant and melodious music, with some obvious references to Puccini, Moussorgsky, Gershwin and Romberg.

Baritone Robert Weede in the male lead was physically and vocally impressive. Mr. Halasz conducted competently and Eugene S. Bryden's stage direction worked wonders with small, overcrowded space.

Despite some remarkable achievements, the New York City Opera Company makes no pretense at being one of the world's leading opera houses. Being spared the ups and downs of a glamorous star ensemble, it maintains a steady pace of soundness and reliability, offering solid educational and entertainment values for reasonable admission fees. It continues to supplement their operatic fare with occasional experiment and to test and train young talent.

The Chicago venture might well herald the establishment of similar opera companies throughout the country. Already plans are being made for guest appearances of the group in other cities, such as Cleveland, Philadelphia and Detroit.

The keynote of American progress in science, research and human relations seems to be the fearless attitude developed under the aspect of true culture which permits a man to appear a fool in search for the seemingly impossible, without depriving him of his tools.
Sharing Our American “Know-How”  
(Continued from page 4)  

techniques for transmitting “know-how” are the exchange of scientific books and reports, the development of United States information libraries in other countries, and the sending abroad of training and scientific films. International conferences, some of which (like those held in connection with the Universal Postal Union) were begun as long ago as the 1860s, are a valuable means for the international exchange of technical information.

Through these and other techniques the Point IV program will seek to strengthen the free world by helping to create conditions which will relieve or eliminate some of the sources of tension and dissatisfaction among peoples and nations.

True, the United States cannot do this tremendous job alone, but it can take the lead in establishing a cooperative program aimed at minimizing the starvation, disease and misery which exist in large areas of the world today. In the long run, our own security as well as that of other nations may depend to a considerable degree upon our ability to help other peoples apply modern scientific and technical knowledge in building a stable, prosperous world.

Scenic Utah—The “Promised Land”  
(Continued from page 14)  

and other Christian denominations, as well as Jewish, were on the scene, and today they have beautiful buildings all over the state.

Many Utahans are found among the leaders in education, science, mining, statesmanship, sociology, law. Utah has produced men known far and wide, men like Senator Reed Smoot, member of the United States Senate for some twenty-five years; George Sutherland, formerly a member of the United States Supreme Court; William H. King, long-time member of the U.S. Senate. In the field of science there are famous citizens like Harvey Fletcher, sound expert of the American Bell Telephone Laboratories, New York City; and Vern O. Knudsen, acoustic expert and dean of the Graduate School, University of California at Los Angeles.

Another typical example of modern Utahans’ achievements is the success of Leroy J. Robertson, professor of music at Brigham Young University, Provo, who won $25,000 as the first prize in the Henry H. Reichhold symphonic award for the Western Hemisphere, said to be the largest prize ever given for a musical composition.

Although the entire population of Utah could be tucked into a city the size of Buffalo, N. Y., and the state is never likely to be largely populated, the Mormons have proved that the Promised Land to which they fled is not irreclaimable desert. And yet the most exciting part of the state will be beyond the reach of civilization. The “rainbow land” of canyons and natural bridges will stay that way, and to see these will come tourists many times more numerous than the people who actually live in Utah. Bonneville flats, racing motorists’ paradise, will not change.

The life of the outdoors goes on—bathing in Great Salt Lake, fishing in clear-water lakes and rivers, hunting, skiing and tobogganing in the winter-long snows of Utah’s hills. Vast accessible wildernesses of trees, streams, lakes and mountains have become a fascinating people’s playground. Here camping places provide such comforts as piped water, sanitary facilities, tables, stores, barbecue pits, softball diamonds, cleared spaces for tents and trailers and, in several places, bathing pools. Utah’s outdoor wonderlands provide perennial charm. The state’s most exciting feature is still the land.

“Beyond the Horizon”  

Seeing from the ground objects 200 miles away is possible—in the Antarctic.

Geometrically, of course, it is impossible—because it would be necessary to look around the curvature of the earth.

The paradox is described by Dr. H. C. Peterson, meteorologist of the Ronne Antarctic Expedition, in his report to the Office of Naval Research on meteorological conditions at the Stonington Island Base Camp during the winter of 1947-48.

During part of the Antarctic summer, Peterson reports, there was visibility up to 100 miles 40 per cent of the time. To see twice that distance, however, the observer had to be favorably situated, with visibility conditions excellent.

Five factors entered into the phenomenon, he reports. The humidity of the air was very low. There was complete absence of haze from dust or smoke particles. Visibility was aided by the exceptional contrast against a blue sky of a white ice cliff. The elevation of the observing station was quite high. None of these four conditions, of course, would enable anybody to see over the horizon. But there was a peculiar condition in the atmosphere due to unequal heating which produced what is known as a “superior mirage.”

The scenery beyond the horizon was mirrored against the sky. Or, says the meteorologist, “The mirage bends the observer’s vision around the curvature of the earth.”

Even on moonlit winter nights with a low cloud cover, he reports, it sometimes was possible to see a snow-capped mountain 100 miles away. It was possible to see from six to ten miles through thin fog.

However, according to Dr. Peterson, sometimes visibility is reduced sharply in a few minutes. Diffuse mists would cut it down from fifty miles to two or three miles.
OUT IN THE FIELDS
The little cares that fretted me,
I lost them yesterday
Among the fields above the sea,
Among the winds at play,
Among the lowing of the herds,
The rustling of the trees,
Among the singing of the birds,
The humming of the bees.
The foolish fears of what might
pass
I cast them all away
Among the clover-scented grass,
Among the new-mown hay,
Among the hushing of the corn,
Where drowsy poppies nod,
Where ill thoughts die and good
are born—
Out in the fields of God.
—ANONYMOUS

WIT
Beauty delights the soul, but wit
the reason:
Wit lasts an age, and beauty but a
season.
The sense is quickly cloyed with
beauty's taste,
When wit's delight still quick and
fresh doth last.
Beauty weak eyes with her illusion
blinds:
Wit conquers spirits and triumphs
over minds.
Dead things have beauty, only man
hath wit,
And man's perfection doth consist
in it.
—SIR JOHN DAVIES

IN SILENT MOOD
I do not wish to sing my favorite
song,
Nor do I wish to say a single word,
I crave the golden silence—is that
wrong?
In silence souls commune and God
is heard.
Maybe through echoes from the
mountain air,
Or murmurs from the ocean, glad
and free,
JUNE, 1949

THE CATHEDRAL
How strange the sculptures that
adorn these towers!
This crowd of statues, in whose
folded sleeves
Birds build their nests; while cano-
pied with leaves
Parvis and portal bloom like trell-
sised bowers,
And the vast minster seems a cross
of flowers!
The fiends and dragons on the gar-
goyled eaves
Watch the dead Christ between
the living thieves,
And, underneath, the traitor Judas
lowers!
Ah! from what agonies of heart
and brain,
What exultations trampling on
despair,
What tenderness, what tears, what
hate of wrong,
What passionate outcry of a soul
in pain,
Uprose this poem of the earth and
air,
This medieval miracle of song!
—HENRY WADSWORTH LONGFELLOW

THE FARMER
Man builds his castles, fair and
high
Wherever river runneth by;
Great cities rise in every land,
Great churches show the builder's
hand;
Great arches, monuments, and
towers,
Fair palaces and pleasing bowers;
Great work is done, be it here or
there,
And well man worketh every-
where.
But work or rest, what'eer befall,
The farmer he must feed them all.
—CHARLES G. LELAND

THE VOYAGE
(From Terminus)
As the bird trims her to the gale,
I trim myself to the storm of time,
I man the rudder, reef the sail,
Obey the voice at eve obeyed at
prime:
"Lowly faithful, banish fear,
Right onward drive unharmed;
The port, well worth the cruise,
is near,
And every wave is charmed."
—RALPH WALDO EMERSON
Intercollegiate Rowing
By THOMAS V. HANEY
Makeup Editor, New York Times

A sport demanding a stout heart, strong back and perfect teamwork... "Intersectional battle" at Poughkeepsie a sport classic.

It was a perfect May day when we stopped off at Columbia's Gould boathouse, nestled in a cove off Spuyten Duyvil. It was early in the afternoon and the big oarsmen had not yet made the long trip up from their 116th Street campus for practice on the Harlem. We found the Lions' coach and two coxswains hard at work, rubbing down a shell that had been turned up for refurbishing. They were smoothing the hull, removing scratches caused by driftwood brushing against the delicate cedar racing craft.

Now it is hard to visualize a football coach and his men polishing helmets or a baseball manager honing bats for his sluggers, but in rowing the coach and his boys get right down to manual labor, and all for their love of the sport and for the good of the crew. * * *

This intense pride in one's equipment and the deep fraternal feeling among the men are just two of the fine things about sweep-swinging. The shells are beautiful examples of handmade craftsmanship and an oarsman soon learns to love his boat just as a seaman gets an affection for his ship. And as the men work together through months of training there develops a feeling of great pride in one's "shipmates."

A skeptic wrote that all a fellow needed to be an oarsman was a strong back and a weak mind, but the man knew little of rowing. It is true that most rowing heroes go unsung and we have yet to read a headline such as "Washington Wins Regatta as Jones Stars" for individual effort is not cheered in this rugged game. Here is a sport that pays off on teamwork — the most skillful and coordinated type of teamwork in which the strength and prowess of individuals is fused to make a smooth unit.

Every man in the boat is as important as the next and this essential fact sets the training tempo. The strongest athlete in the world might be at stroke, but without seven men behind him capable of picking up that power all his strength would be in vain. And the little coxswain isn't along just for a ride either; for he must pace his team's strength through a race while keeping a sharp eye on every move by rivals.

Rowing requires much more than a strong back. It demands a stout heart to keep training from midwinter till late June. There is tiring work on the indoor machines and long runs during the cold months; then long days on the water as the weather warms.

Al Ulbrickson, the University of Washington's great coach, once said, "If there is any one thing that a crew requires it is Spartan living. When I see a fellow who can't give up late hours, liquor and hot cakes swimming in butter and syrup, I advise him to give up rowing."

There is little need for a coach to check on his men's free hours for an oarsman realizes that any training lapse not only hurts his chances of holding a place in the boat, but also is unfair to those shipmates he likes so well. Top condition is essential for there is no chance to take a "breather" while others "carry the ball." Every stroke is a team play in itself. And when the coxswain barks "Take her up five!" as the racing shells hit the stretch, the strokes come faster, the heavy sweeps dig deeper and condition really pays off.

In most athletics, participants have had previous experience, but there is little rowing in preparatory schools and few college candidates are accustomed to swinging a sweep when they report. There are no hand-tailored stars in the group, few have a school record to boast of and all are on equal footing. This results in constant, healthy rivalry among the men. * * *

Climactic events of the current season come on June 24 at New London and June 25 at Poughkeepsie. The Yale-Harvard meeting, steeped in tradition and color, remains a private duel, but the Intercollegiate Association regatta up the Hudson has become a real intersectional battle since California and Washington began their domination of the East.

When the fragile shells, looking like giant water spiders, jump away from the stake boats for the three-mile Hudson grind, Washington again will be defending the championship. But there will be many rivals, all well-trained, who will be trying hard to return the handsome trophy to the East.
ONE of the most versatile writers of his time, who died five years ago at the age of eighty-one and was known to his friends as "Q," has now to his memory "Q An-" was known to his friends as "Q," Couch" (New York: Macmillan Prose and Verse of Sir Quiller- thology: A Selection from the Company), compiled and edited by F. Brittain. Sir Quiller-Couch was editor of one of the outstanding anthologies, "The Oxford Book of English Verse." He also was the author of several volumes of short stories. He was a poet, both of light and serious verse, and the author of several books for children. He wrote literary criticism based on his lectures at Cambridge University and these are now collected in a dozen volumes.

THE ACCOUNT of "The Coral Sea" (New York: Whittlesey House) by Alan Villiers will be of particular interest to Americans whose acquaintance with this body of water was made during the last war. Not until James Cook discovered the east coast of Australia in 1770 did anyone make a successful voyage right across the Coral Sea. It is only a small corner of the Pacific, the reader is told, yet it covers an area about as large as half the United States.

A WATCHMAKER'S SON, born in Paris in 1732, Pierre-Augus- lin. All the travelers quoted were impressed by the evidence that Americans were strange peo- ple. Although some doubted the future of the country, the major- ity were thrilled by the new repub- lic and its destiny.

AN ANTHOLOGY of the literature of the Pacific has been brought together by Carl Stroven and A. Grove Day under the title "The Spell of the Pacific" (New York: Macmillan Company). The compilers are both professors of English at the University of Hawaii. Their material is arranged in eight sections concerned with the sea, Polynesia, Hawaii, New Zealand, Australia, Melanesia, Micronesia and the Philippines. It is devoted to exploration, wrecks and castaways, tales by travelers and adventurers, folklore, short stories and poetry. The authors include such historical figures as Bougainville, Darwin, Huxley, Melville, Twain, Henry Adams, Conrad and Stevenson. There are also some excellent stories by little-known writers. The variety of material ranges from the idyllic history of Polynesia, where brown-skinned maidens are as innocent as they are winning, to Melanesia, ruled by can nibals, mosquitoes and malaria.

Books for a New Countryside (Continued from page 6)

of Democracy can farm families keep abreast of these problems without a sound program of co-herent book reading?"

I thought back to the nights at the neighborhood sociables in Ohio: the sedans and trucks pur- ring up the hill roads, past the black shadows of Johnny Appleseed's orchards and the square white-buildings where our tradi- tion and our heart songs were born; across the fields and over the roaring creeks that inspired teach- ers a century ago. This was the soul of the American Dream. Out of it came the joy of living that surged America forward, on from the hand-hewn bookshelves that held Aeschylus, Plato, Gibbon and Erasmus.

The headlights slashed the night, feeling toward the sociables and the long book-talks across the par- lor. The American Dream was about to reblossom with new patterns of freedom for the infinitely smaller, infinitely more complicat- ed and more intense world of 1949.
Atom Energy and the Future (Continued from page 8)

Finally, the shields must be able to withstand all these reactions. Further, as the pile gets larger its weight increases and to an even greater extent the weight of the shield increases. Therefore, the thinner we can make the shields the more feasible it becomes to put a reactor of a certain size in an airplane or a ship. It is all very well to use a thick wall of concrete but the shields of the future undoubtedly will contain many new types of alloys and ceramic materials which will permit them to be much thinner than the ones now in use.

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The control rods can be made of various substances and here again new metals, alloys and ceramic materials with special properties of being able to withstand radiation, corrosion and high temperatures will be in great demand.

The pile also has to be monitored for the level of radiation with regard to neutrons, electrons and gamma particles and these new materials of very high purity will again be in demand for producing the instruments of the future for the control of these critical operations.

If the piles are to operate as power-piles, the fuel rods will have to be taken out from time to time and purified of those fission products which are neutron poisons. This means the construction of chemical equipment which can operate simply by remote control and which will withstand radiation, corrosion and heat. Here again the chemists can play an important role in producing this equipment.

As new processes are developed for producing new alloys, new ceramic materials, and unusual metals of very high purity, these same processes can be used for producing other materials for industry in general. The very pure materials themselves will find many industrial applications which probably in the long run will far outweigh their importance in nuclear reactors.

I believe it is obvious from what I have just stated that as various types of power-reactors are developed in the future, greater and greater use is going to be made of elements of the periodic table which are not generally available commercially in quantity and in the forms desired. These elements will be demanded because of their peculiar nuclear or chemical or physical properties. Many of them are reasonably abundant in nature but due to lack of commercial demand have never been systematically studied for the purpose of producing them cheaply, in quantity, or with great purity. Those which are available are usually available as the result of by-products of other processes.

* * *

As these lesser known elements are demanded in various metals, alloys and compounds, new industrial processes will have to be developed to produce them, starting all the way from the concentration of the ores through the refining right up to the fabrication of the finished product in the desired form. The industries which do develop them will find that in addition to the Government's demand for reactor materials, these substances will find wide industrial application in other lines of endeavor.

—From speech accepting the Iowa Medal of the American Chemical Society.

OUR COVERS

Inside Front — Country road near New Marlboro, Massachusetts. Photograph by John Strang.

Inside Back — Coast scene in Penobsot Bay, Maine. Photograph by Eleanor Rost.

Back — Giant sequoia grove, Sequoia National Park, California. Photograph by David W. Corson.

New Contributors

Willard L. Thorp, Assistant Secretary of State for Economic Affairs since 1946, studied at Amherst College and did graduate work at the University of Michigan and Columbia. He was Professor of Economics at Amherst from 1926 to 1934, and director of economic research for Dun & Bradstreet from 1935 to 1945, when he entered the State Department. He is a trustee of Amherst College and chairman of the executive committee of the Social Science Research Council ... Dr. Frank H. Speeding, Director of the Ames Laboratory and the Institute for Atomic Research at Iowa State College since 1946, studied at the University of Michigan and did graduate work at the University of California. He became associated with Iowa State in 1937, and has been Professor of Physical Chemistry since 1942. He won a Langmuir Award in chemistry in 1933, and was recently awarded the Iowa Medal of the American Chemical Society ... Howard S. Raines, New England Editorial Director for Fairchild Publications, has been a writer in the field of business and finance for the past twenty years, specializing lately in the New England industrial scene. He has received several citations for his studies of industrial and business conditions ... Rev. Dr. Edward KuHLMANN, Pastor, Good Hope Lutheran Church, Oil City, Pa., since 1926, studied at Capital University, prepared for the ministry at Evangelical Lutheran Seminary and was ordained in 1907. He has been chairman of the Board of Publications of the American Lutheran Church for the past ten years, and was formerly Associate Editor of The Pastor's Monthly. He has written extensively on religious subjects ... ETHEL BroOKS Koger, whose poem "In Silent Mood" appears in this issue, is international vice-president of the Poetry Society of Great Britain and America. She is a frequent contributor to magazines and poetry anthologies. THINK