THE SERVICE NUMBER

This, the twenty-fourth volume of the Ames Forester, is dedicated THE SERVICE NUMBER in honor of the twenty-five years of devoted service Professor G. B. MacDonald has given the Forestry Department at Iowa State College. His high idealism and tireless effort, which he carries into professional forestry and everyday life, are a constant source of inspiration for all those privileged to know him.
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A Glimpse Into the Life of “Prof. Mac”

A HARD-FOUGHT football game was in progress at Iowa State Field in the fall of 1910 when the Cyclone field was north of Engineering Hall. The faculty was playing the seniors who had just finished their season's schedule and were in good condition. It was hard work for the faculty, but they were putting up a great battle for theirs was a team of football heroes of the past not accustomed to defeat.

At the end of the third quarter neither team had scored. The faculty quarter-back had exhausted his bag of tricks and was about worn out from tackling and breaking holes in the line for his ball carriers. He was calling signals now; the backfield suddenly shifted to a new formation; the ball was snapped from center; strange, the diminutive quarter reached for it himself. He dropped it to his toe and it flashed in a clear arch between the goal posts 40 yards distant. The score stood 3 to 0 in favor of the faculty. In a few minutes the surprise play was repeated and the game ended 6 to 0.

That game did two things. It won a victory for the faculty and introduced the new forestry professor, G. B. MacDonald, better known now to all his student and alumni friends as “Prof. Mac,” to Iowa State College as a football hero and a man who does things. Everyone on the field and in the crowd who watched the game immediately developed a strong liking for the new professor, not because he won the game but because of the way he played it.

WHY did he do so well in that game? Those who know him say it was because he concentrated with all his might on each play and forgot the sidelines; because he knew the strength and ability of each man on the field and never lost command of the situation; because he threw himself into every play with an unconquerable fierceness and yet with the skill of one who knows his own limits; because he never spared himself at any time; because he loved to do and dared to do where others feared and hesitated and failed.

It might well be said that Prof. Mac has carried his football
style into everything he does in life for he succeeds with each assignment equally well.

In the 25 years since 1910 as head as the Forestry Department at Iowa State College, Prof. Mac has seen the department grow under his direction from a mere handful of students with one instructor to a present enrollment of over 300 with a faculty of six. He has sent many of the boys he taught out to fill jobs of apparently greater responsibility than his own and has in many cases inspired them to success when failure seemed inevitable.

Prof. Mac may well be proud of his alumni who were rated near the top on the basis of responsible positions recently by the Society of American Foresters. He may also be proud of the fact that the Society rated Iowa State among the fourteen approved forestry schools in the United States from the standpoint of training given, in spite of the fact that Iowa is not considered a forest state.

ALTHOUGH unfailing in his loyalty to Iowa, Prof. Mac's early life was spent in the neighboring state of Nebraska. He was born at Carleton, Neb., only one-quarter mile from the Kansas line, on March 9, 1883, and was christened Gilmour. His father was a Presbyterian minister of Scotch descent. The family moved successively to Hubbel, Hopewell, and Unadilla, Nebr., where his father held pastorates.

His family assert that he and his four brothers lived the lives of normal boys with no more than the usual number of boyish escapades to their credit. One of these included an investigation of the effect of tobacco on growing boys. The results of this research were reported most inopportune at the parsonage by five very sick boys when their mother was in the midst of entertaining some ladies of the church.

When young Gilmour was in the fourth grade the family moved to Lincoln where the boys completed their schooling. At Lincoln High, Gilmour became interested in football under the able coaching of Dr. G. E. Condra, now Dean of the Conservation and Survey Division, and State Geologist, University of Nebraska.

One year of college without a definite objective was too much for this impatient young man. He left school in 1902 and went to California where he worked on a fruit ranch for a short time and then found a better job in a large department store in Sacramento. In the summer of 1904 when one of his brothers died he gave up his job and hurried home to Lincoln.
While there he decided to continue his college education although he was still uncertain as to the field since none appeared attractive. Then Dr. Condra suggested a new field that offered great possibilities for a young man—forestry. The idea was exactly to Gilmour's liking. He enrolled in forestry at once.

For relief from books he interested himself in athletics where he soon acquired a reputation as a star performer in both football and track. He played either end or quarterback on the football squad and as a member of the track team was a pole vaulter. During a dual track meet with Ames in 1906, Prof. Mac took first place in that event.

In the summer of 1905 he worked at the Forest nursery which had just been established at Halsey, Nebr. Then he returned to school in the fall and the following year was again employed at the nursery for eight months during the spring and summer. With him was Carlos G. Bates, present senior
silviculturist for the Lake States Forest Experiment Station. Together they labored many long, hard days. Prof. Mac still recalls excursions in search of botanical specimens made by lantern light in order to save the daylight hours for heavier work.

In the fall of 1907, Prof. Mac received the degree of bachelor of science in forestry. He had taken a civil service examination before graduation and his appointment with the title of forest agent and expert arrived shortly after graduation.

At about the same time he was offered a fellowship at the University of Montana which he declined in favor of the Forest Service appointment. His first assignment took him to the Medicine Bow National Forest in Wyoming on a seed collecting job. Fresh from college and with no advance expense allowances or equipment he was instructed to collect thousands of bushels of Douglas fir and lodgepole pine cones. He proceeded to round up a crew of young tree climbers and managed during the course of the fall to collect and extract approximately 3000 bushels of cones.

He discovered that squirrel caches were the most convenient source of cones, but circumstances arose which made it difficult to capitalize on the squirrel’s savings. Women’s organizations in the locality learned of his intentions and attempted to stop his work by a little notorious publicity. However, in spite of the opposition and a natural sympathy of his own toward the little beasties, he was convinced the sentimentality was not justified and completed the job.

He spent the winter of 1907 in Washington, D. C., working for S. N. Spring, Chief of the Department of Forest Extension, and now dean of the Syracuse school of forestry. Here his work involved the making of planting plans and nursery reports and correcting Civil Service planting exams.

In the spring of 1908 he was detailed to start a forest nursery at Pocatello, Idaho, and to conduct planting operations on the Pocatello National Forest. That fall he was assigned to the Section of Forest Planting in the District (now Regional) office at Missoula, Montana, where W. B. Greeley was district forester and F. A. Silcox was assistant district forester.

Early in 1910 he was placed in charge of the Boulder, Montana, nursery, where he assumed the task of enlarging a small unit to one of 8 million trees in 4 by 12 foot beds. He obtained a leave of absence while there in order to go to Lincoln and marry his home-town sweetheart on February 1, 1910.
While in Lincoln he met an old friend, C. A. Scott, who was teaching forestry at Iowa State College, and who was anxious to be relieved of his duties long enough to investigate an offer of the state forester's position at Manhattan, Kansas. Prof. Mac helped him out by filling his place at Ames during the month of February, 1910. Prof. S. A. Beach, vice-dean of Agriculture and head of the Department of Horticulture and Forestry, was very well impressed with Prof. Mac and his bride, and when Scott accepted the Kansas job, Prof. Mac was offered the teaching position.

He declined the offer and returned to Montana. However, after reconsidering, he decided to accept and was at once hired for the following fall. Meantime the worst fire season in history (1910) had broken out over Idaho and Montana and Prof. Mac fought fire continuously throughout the summer.

In fact, he refused to leave the big blaze until the last train which would carry him to his new job on time arrived.

As a forestry professor, Prof. Mac was immediately alive to the possibilities of forestry in Iowa. He convinced the school that one forestry instructor wasn't sufficient for training professional foresters and secured the services of Nelson C. Brown, now of Syracuse and author of several forestry text books, for one year. From that time the number of instruc-
tors has gradually increased and Prof. Mac has worked hard to secure the best men in the field.

Not satisfied with educating the students in forestry Prof. Mac extended this education to the general public. He was instrumental in organizing the work of the Iowa Conservation Association the purpose of which was to crystalize conservation sentiment in the state. As secretary of this organization for many years he was one of its most active members. He also published several bulletins on forestry subjects for general distribution to the public. One of these embodied a survey of timber resources of the state and contained ideas on land classification that economists are now beginning to put to use. This is one of the instances in which his vision was out ahead. Another of those instances occurred when, as a result of his wide knowledge of Iowa's natural resources, he assisted in working out a detailed "Twenty-year plan" which was ready for use in 1932. Then a year later when President Roosevelt requested the states to throw 200-man camps into immediate action on state conservation projects no state was in a better position to do so than Iowa. And Prof. Mac was shouldered with the duties accompanying the title of Director of Emergency Conservation Work in charge of Civilian Conservation Camps in Iowa.

At the same time under the CWA set-up he was in charge of the Forest and Wasteland Survey in the state which later served as the basis for planning the purchase areas for the national forest program in Iowa.

For many years he had interested himself in soil erosion as a problem for foresters. He could see the relation of forestry to erosion and farming so clearly that he had a plan for the three already formed before the soil conservation program was up for consideration in Washington. Then came the conservation boom and CCC Camps were set up almost overnight in every state. Technicians and directors in Washington searched for a plan applicable to conservation and farm lands but found none. When Prof. Mac presented his plan to Director Fechner it was taken immediately to the president and approved without delay. The same day telegrams were sent to the directors of the several states giving starting instructions on a workable plan.

A keen understanding of his surroundings has thrown jobs on Prof. Mac many other times. During the World War he
was assigned to the task of collecting data on available forest products that could be used by the army. This included running down black walnut for gun stock material. Another task has been that of deputy state forester under the secretary of agriculture from 1918 to 1935. In 1935 when the Fish and Game Commission and the State Board of Conservation were combined, he was appointed state forester under the present Conservation Commission.

It would appear that Prof. Mac has always been the serious, hard-working forester. However, such is not altogether the case. His "outside" activities are as numerous as his conservation activities for he likes people as well as he likes trees. He has always contributed his time, money and talent to student activities outside the class room where he is found a favorite.

He early became affiliated with the Collegiate Presbyterian church as an active member and later as an officer. At present he is a life elder which is an honor held by only one other person of this church at Ames. Also he is a trustee of the Westminster board which is a body organized to administer the affairs of the church at the three state schools in Iowa.

The high idealism of the Boy Scout movement early attracted Prof. Mac's attention, and he volunteered his services. He was scout master of the second troop organized in Ames, in 1913. Since that time he has maintained his interest and has attained the highest honor in the organization, known as the Beaver Award. In 1933 he received his 20-year Veteran's Award and in 1934 was elected to honorary membership in Alpha Phi Omega, Ames eagle scout honorary fraternity.

His work has been so highly valued by the voting populace that he has been reelected city councilman for the past fourteen successive years.

Although he seems to accept all jobs with equal willingness, Prof. Mac found one job at the school which, by his own admission, he thoroughly disliked—that was five years as committeeman and five years as chairman of the student discipline committee. This committee, which held jurisdiction over all students both on and off the campus, was abolished in 1928. The interesting but distasteful tasks included everything from "okaying" class excuses to expelling students from school.

On some occasions the committee took the punishment. Approximately 500 students in one case had walked out on
classes and the president ruled that none could return until they had individually appeared before the committee and presented their cases. Prof. Mac and his fellows worked all the daylight hours and much of the night every day for two weeks to complete the job.

FROM the busy life he leads, no one would guess Prof. Mac was much a family man. However, he has a family of which he may well be proud. All his success he attributes to his wife who is as talented and active as he himself. She also loves the woods and camp life and with the children they have many good times together on camping trips and at their summer cottage on the shore of Cass Lake in Minnesota.

The children are Gilmour, age 25, Donald, age 21, Mary Janet, age 19, and Ruth, age 11. Gilmour is married, and is now working in Missouri after having received a B. S. degree in mechanical engineering at Iowa State College. Donald and Mary Janet are both attending college here at present. Incidentally, Mary Janet is one of Iowa State's 1936 Bomb beauties.

When Prof. Mac was procurement officer for 40 CCC camps as well as supervisor or director, councilman or consultant for several other organizations it appeared the school was losing him altogether. However, he has again managed to rid himself of many minor duties; the Soil Conservation Service and the Park Service have relieved him of responsibility for their camps altogether, and he finds some time for teaching. He still considers the school by far his most important job and always finds time to steer a baffled student or a faltering alumnus back into his course.
The Spoils System Challenges
American Foresters

By H. H. CHAPMAN

TO THOSE of us who have observed and participated in the forestry movement for the past three or more decades the present era is even more significant than it must appear to men who contemplate, as we did, making forestry a life work.

In 1900 the age of exploitation in the Lakes States pineries was at its height, and the development of the same type of lumbering was well under way in the South and vigorously started in the Pacific Northwest. These large scale operations based on the theory of mass production in big units were a logical growth of the economic forces which in all other industrial enterprises were trending towards bigness, seeking economies in manufacture and lowering the costs of production and prices to the consumer. Such practice appeared as economically sound in lumbering as it did in steel and cotton.

VIEWED from the present vantage of experience, the industry and the public can now see what foresters visualized at the start. No stream can rise higher than its source. No industry can survive the exhaustion of its raw materials. The basic resource in lumbering, as in agriculture, is land. On the conservation of its productiveness rests the economic life, which means the physical existence of the race. The pyramid of any civilization is based on the soil and waters, their biological and mineral products, and the yield in stored up (fuel) or currently produced energy (plant and animal life).

In human affairs the impact of new ideas and technology releases new forces, as happened in the industrial revolution. These developments are made possible by underlying conditions, physical, economic, political and social. Once the new order is established it rapidly tends to become crystallized in practice and in habits of thought. The European immigrant was not slow in shaking off a traditional old world conservatism in the use of soil and its resources, which was of necessity retained unbroken in such nations as Germany, France and Scandinavia.
Instead, he recognized that the magin of profit here lay in the harvesting of wealth which he had not created, the reaping of crops he had not sowed. There was no discernible profit in forest conservation for the private operator in expenditures on fire protection and investments in young growing stock or reproduction, in the face of public indifference to fire and a system of taxation itself a product of the age of exploitation.

FORESTERS faced the task of bringing about a complete revolution of attitude on the part of an entire civilization; no less than the substitution or restoration of an economy based on permanent and careful husbandry of otherwise vanishing resources of the soil in place of the free and glorious epoch of pioneer energy and extravagance. The difficulty of this task is well illustrated by the trend of present political policies, which in seeking the way out of an economic impasse, instinctively turns to the prodigal methods of an outgrown era and seeks by lavish flow of supposedly inexhaustible financial resources to lift us out of the depression by our own bootstraps.

In still another way this holdover of pioneer habits of thought arises to plague and hamper us in the effort to establish the new era. In a rapidly developing economic and political period, the spoils system of politics is broadly accepted not merely as a necessary evil but as a definite philosophy of government. One man is “just as good” as another. Political victory carries with it regard for party loyalty in the form of jobs. The idea that public administration is a highly technical business, demanding expert and trained services fully on a par with private enterprises has to make headway slowly against this primitive and rudimentary social tradition of the Jacksonian era of our national life. Yet we find ourselves suddenly faced, in forestry as in all other federal and state activities, with a sweeping recrudescence of this spoils doctrine under the banner of its patron saint and with the vigorous, ruthless and skillful marshalling of all forces of the administration in its defense.

Confronted with the need for wisely planned economy for the better utilization of our physical and financial resources, we find ourselves submerged in a maelstrom of ill considered and uncoordinated plans whose backing is unlimited drafts on the present and future credit resources of the nation.

FACED with the prime necessity of establishing once and for all the merit system of employment in public affairs, including all forms of soil conservation, we are caught in a flood tide
of reaction towards the good old pioneer days of political “loyalty” and partisan machines, in which the party coffers are filled by levies on the salaries of office holders, technicians of long service and trained ability are dismissed to make room for more of the faithful, and men ignorant even of the basic goals and objectives, much less of the technique of accomplishment in conversation, are blithely placed in charge of such departments and instructed to go down the line in selecting their subordinates, at the behest of local political chiefs.

I am speaking of existing facts, not of possible tendencies. Unless intelligent planning and coordination takes the place of reckless waste, and until trained administrators can be protected in the exercise of public trusts and responsibilities, this nation, regardless of all grandiose planning, will pursue to the bitter dregs the logical results of the free and easy policies of a prodigal youth.

Thus it would seem that the vision of the forester, of a nation husbanding its soil and forests, renewing its strength by wise conservation of trees, plants and animal life, of agriculture and forestry, minerals and game, waters and human energy, is not to be fulfilled by the mere weight of logic or appeal to sentiment and reason. Its triumph can come only by coming to grips with these inherited evils which, like a poisoned appendix in the human body, may bring the entire nation to ruin through its outlived usefulness.

FORESTERS do not need to be told that public service in their profession can be made promising and worth the while of a professionally trained man only if the career is made to depend solely on the worth of his achievements and his ability in securing sound results. A few there are who temporarily bow the knee to Baal or even kiss his foot in return for fairly lucrative jobs—but having been driven by expediency to accept or even defend the political system in conservation, they soon lose out, are replaced by others of their persuasion, “and the place thereof knows them no more.”

Not only the permanent welfare of the country in this new era of conservation, but the very existence of the profession of forestry itself depends now and has from the days of Fernow and Pinchot, solely upon the final triumph and establishment of the merit system in public office.

As individuals foresters are helpless to combat these organized, titanic forces of political expediency and corruption. The Pennsylvania state employee, who is forced to pay a part of his
salary to the existing party machine, or who is replaced after thirty years of faithful service by someone with strong political sponsorship, must merely fold his tent and slip away to seek a job elsewhere unless pursued by a political vendetta or blacklist, which closes such avenues of reemployment.

ONLY through a united front, and by fighting for basic principles of public policy and welfare, and by this means enlisting widespread and powerful public support, can the individual members of any profession protect or advance either their own welfare or that of the public which they serve. But by this means they can and will exert probably the most powerful of all influences in the bringing about of the new deal.

For this end, the Society of American Foresters exists, and towards these objectives it will strive. Those who are indifferent to the ends in view, those who are self sufficient and distrust united efforts, or those who are willing to receive the benefits of professional advancement without sharing its costs, will remain indifferent to their professional society. Only about one-fifth of those practicing law belong to the bar associations which are constantly struggling to elevate the standards of legal ethics. If this proportion were reversed, it is my belief that the overwhelming burden of crime in America might be considerably reduced through bettering the standards of legal practice. The medical societies have been found to be the only effective means for protecting the public against numerous forms of charlatanism and quackery which still flourish lucratively.

FORESTERS by their training and experience, by the breadth of view demanded in their profession, and by temperament, are fitted to be the leaders in conservation not merely through their grasp of sound technique, but because they embody the principle of stability and efficiency in administration upon which the future edifice of economic and political empire must be founded. The Society offers them a field for free and open discussion and criticism not only of technique but of political policies and administrative activities. If censorship increases it may even become a last citadel for professional freedom of thought. At the same time, through it the profession can put up both a united and an organized front in the warfare against reaction and self interest which would obstruct the coming of the era of true conservation and permanent welfare and prosperity.
DR. R. M. HUGHES, president of Iowa State College since 1927, brought to a close his brilliant and aggressive career of 23 years as a college president, when he tendered his resignation in March of this year. Continued poor health and his sincere consciousness of his heavy responsibilities prompted President Hughes in this action.

After accepting his resignation as president, the State Board of Education made Dr. Hughes president emeritus. He is the first person to hold such a position at the college. Continuing as a member of the faculty, he will devote his time to working with the students and will perform such duties as Pres. Charles E. Friley may assign to him. Next fall he will inaugurate a new senior course in the field of student problems.
ALMOST simultaneously with the acceptance of the resignation of Pres. R. M. Hughes, the Board of Education called Dr. Charles E. Friley to the presidency. Dr. Friley has been dean of Industrial Science since September, 1932, and vice-president of the college during the past year. When President Hughes left the campus for a six months leave of absence last November, Dr. Friley assumed the additional responsibilities of the president.

He intends to follow the policies so well established by Dr. Hughes. Feeling the personal element has been lost in mass education, he stresses quality rather than quantity in education and looks toward a system which will develop the individual.
"Millions of forest acres have been saved from fire."
The Tree Troopers

By JOHN D. GUTHRIE
General Inspector, EWC

THE Civilian Conservation Corps is now three years old. It was created by Act of Congress of March 31, 1933, and on April 10, 1933, the first of the American youth signed up in this great social experiment. It was an experiment in unemployment relief, in government organization, in using green and raw youth in conservation. It was an unusual experiment in federal and state cooperation, involving 4 different government departments and 48 different states. The game started with a bang and the rules had to be made as the game went on. Plays had to be worked out and tried as the game progressed; some proved to be good and have been used ever since, others had to be dropped. The game went on, and still goes on.

THE players in this game, the enrollees in the Civilian Conservation Corps, represent a cross-section of present-day American youth. While the classes of society represented may vary from state to state, or from city and country, the fact remains that the CCC is a section of our youth. There are farm boys, small-town boys, big-city boys, boys from industrial centers, from city slums, from rural slums. There are boys who never saw a grade school, some who never got through grade school, many high school boys, and some with one or more years of college, and then there are the illiterates who, when they entered the CCC, couldn’t sign the payroll. There is a strict physical test for the CCC but no mental test.

Boys from mining towns, messenger boys, bell-hops, shoe-shiners, college boys, budding poets and artists, city guys, wise-crackers, jazz singers, tap dancers, would-be pugs, foreign strains from southern Europe, negroes, an occasional Jap or Chinese boy, many Mexicans—all these and more you find in the CCC melting pot.

When the boys first enroll some are despondent, suspicious, sullen, boastful, impudent, or timid, scared, and homesick. Some are happy, some good fellows, some unsocial. Some adjust themselves to camp life, the group life, quickly—others
find it very difficult, some are plainly misfits; the CCC is a great melting pot. This is the raw material as it comes into the Corps.

For the most part, they have the saving grace of youth, which means adaptability, and with regular meals and hours of sleep, and under the alchemy of healthful out-door work, they soon fit into the Corps. Rough spots in many an unsocial nature get smoothed off, they learn to "take it." There's the company, the barracks, the work crew, the smaller group under a leader—and the boy, if he is going to make it at all, soon fits into the place he plays in the game.

This is what one has seen take place for three years now, with over one million boys, in every state in the Union, and in Alaska, Hawaii, Puerto Rico, and the Virgin Islands.

The CCC camp is a small town, with its own organization and discipline, commissary and quarters, its own work and play, its own life and spirit. Some are models of sanitation, attractiveness and comforts; some not models. But each reflects the personality of the army officer in charge. In every case the camp is the home of the boys for six months, a year, or maybe two years.

I have seen camps which, in spite of unattractive settings, have been made into real homes for the boys, camps in which the enrollees took the greatest pride, and on which they spend many hours of their own time to improve and beautify; recreation halls which had a real homelike appearance and atmosphere; others which looked for all the world like hunting lodges or a sportsman's club.

I have seen mess halls as clean, as attractive and as pleasant as any dining room of a wholesome American home, with plenty of food, simply but well prepared and served. Think of what such places have meant to thousands of boys who had spent one or more years thumbing their way about the country looking for jobs which didn't exist!

I saw during the first few months of the CC many underfed boys seat themselves at mess tables and grab for meat and bread and gorge themselves like half-starved animals. And I have come back to some of these camps some months later and seen the same boys orderly seat themselves and leisurely help themselves to the food, using good table manners and displaying consideration for their fellow-diners. I have seen more than one camp where it was the camp rule that the men must be clean-shaven, have their hair brushed, and wear shirts and ties at the evening meal. Such habits will not be lightly cast aside.
later in life by these youths, wherever they may be.

As a rule, the army officers have realized and accepted their responsibilities as to shelter, subsistence, morale, discipline and education for the boys in the CCC camps. Perhaps the using of civilian agencies could have done these jobs better or as well—but I doubt it.

"Eight hours per day for five days per week" on conservation work was the plan. An hour out for lunch and not over an hour for coming from and going to the work. This has varied, of course, whether the work was near to or distant from the camp. The work hours are not hard; many believe they are too easy, far easier than these boys are apt to have when they get out and on their own.

Almost every kind of possible outdoor work has been done by the Triple C boy. Naturally this is true when the many different kinds of camps located in the many different states are considered.

Statistics are dry things and although they are the stuff of which reports are made, I shall omit them. Many thousands of miles of truck-trails have been blasted, cut, picked and shoveled out all over the United States; too many miles, some people believe. Foot, horse and pack trails; foot, horse, stock and vehicular bridges by the thousands, constructed of poles, logs, lumber, concrete and cable, now span dry arroyos and rushing rivers because crews of young Americans worked there. Fire towers of steel or log now look out from hundreds of mountain tops to spot the rising smokes; the silvery telephone wire gleams through miles of forest to carry the urgent message. Millions of forest acres have been saved from fire or insect or fungus. More millions of acres have been cleaned of dead and down timber, or crooked, stunted forest weeds cleared out which the forester hoped but never expected to be able to cover.

Nurseries have been grubbed out, plowed, harrowed and sown to forest seed, and later the seedlings set out to restore the vegetative cover of bare mountain sides. All these have the CCC done.

They have labored in many a gullied field to dam the rushing flood water, leveled off the steep sides and planted grass or shrubs or trees.

Camp grounds, whether on National or State Forest, or National or State Park, have become realities, with all the conveniences to make the camper, hiker and recreationist happy and content. Depleted ponds or streams have been improved,
"They soon fit into the corps."

or built, for fish life, while new refuges for game animals and migratory birds have been created and made habitable for wild life. New forests and new parks have appeared on maps and made realities by CCC labor.

All these and more has the Triple C army wrought.

THE ECW is headed by a Director (Robert Fechner) with an Advisory Council made up of one representative each from the Departments of War, Labor, Agriculture and Interior. The Director and his Council approve all camps, make the rules and regulations and formulate the policies under which the CCC operates.

The Labor Department furnishes the men; War feeds, clothes, looks after their welfare, pays them, and runs the camps. Agriculture and Interior plan their work, direct it, train the boys to work, and help in camp educational efforts. The Army runs the camps, the civilian departments run the work. The field set-up is one of dual authority which calls for mutual consideration, confidence and cooperation (again the three C’s) between the Camp Commander and the Project Superintendent. Unless these two work together for the good of the CCC project as a whole, the game slows down, fumbling results and yardage is lost. Happily in the great majority of camps these men play the game together to success.

What has the boy himself gotten out of all this? Board, shelter and clothes, and the chance to send $25 home each month, or an equivalent of about $3.00 per day. It is my conviction that the average CCC has paid his way, in spite of his
He has learned to work with others and for others.

youth and unskilled labor. But the boy has received much more than any money equivalent. Among other things he has learned to work, to live an orderly life, to form regular habits, to keep his body clean and to build up that body, to learn to work with others and for others, to respect their rights, to be self-reliant, to learn from books and teachers and the men over him, if he cared to, but to learn more from his fellows, and from nature, to become a part and parcel of the conservation idea by translating it each day into work on the ground. The camp, the work, the life, have made a man of him—if he had anything in him to build on.

Over a million boys have passed through the camps. Of these about 285,000 were given voluntary discharges to take outside jobs offered them specifically. Hundreds have stayed on and been promoted to better jobs in federal and state services. There was scheduled for some time in March a special Civil Service examination for Junior Assistant to Technician, open only to CCC enrollees in the campus and to former enrollees now on duty as sub-foremen in the camps. It is certain that a very large number of the boys will try this examination and probably a big percentage will pass. This is apt to be the largest examination the Civil Service has ever held and I should not be surprised if it resulted in an eligible list of over 10,000 names.

This examination is important from two angles—first, it is the first Civil Service examination held for any CCC supervisory personnel, and secondly, because it may be the means of open-
ing up a future for many of these fine boys who have worked hard and earnestly and who are ambitious to make good in some phase of conservation work. It is encouraging to us all that a start will be made to stabilize the selection of the supervisory personnel in the camps.

IT IS too early yet to say definitely and finally, but it seems certain that the CCC in some form will become permanent. The President said last September that he would like to see its strength fixed at 300,000. It is authorized by Congress to continue as it is until March 31, 1937; undoubtedly before that date Congressional action will be taken as to its continuance; probably the present Congress will not attempt to make the CCC permanent. Before it is made permanent it would seem wise for all using agencies concerned to consider and agree on certain changes found necessary during the first three years of the Corps.

The Civilian Conservation Corps has made good as far as the American public is concerned; this imposes a heavy responsibility on us all to keep that confidence. It has made a tremendous contribution to American conservation; it has sold the word, "Conservation," to millions of people. It has given to every boy who has gone through a CCC camp a stake, a life-interest in American conservation.
When Forestry Was Young

By E. A. SHERMAN
Assistant Chief, U. S. Forest Service

An address given at a banquet on February 22, 1936, at Ames, Iowa, in honor of Professor MacDonald's twenty-five years of service as head of the Ames School of Forestry.

FELLOW Foresters, fellow alumni and friends: We are assembled for a multitude of purposes. To record our general interest in conservation as a principle, to bear testimony to our special faith in forestry as an instrument of conservation, to gather inspiration from a great educational institution renowned throughout the world for its agricultural leadership, to express our faith in the courage and consistency of the people of this great commonwealth whom it serves, and in all this to pay tribute to the work and services of one who for a full quarter of a century has carried the banner of progress for our common ideals and common objectives, Prof. G. B. MacDonald, dean and creator of the Ames School of Forestry.

I have known Professor MacDonald for nearly a quarter of a century. I wish I could justly claim some credit for having in some way contributed to his success in our profession. Instead of doing so, I must admit that the obligation, if any, is reversed and that he contributed to successful administration by me. It was while I was serving as Regional Forester at Ogden, Utah, that Professor MacDonald appeared in the official picture of forest administration as I was then experiencing it. He had taken his bachelor's degree in forestry at Nebraska in 1907, had served with credit and promise as a member of the Forest Service and from 1910 was the directing head of the new school of forestry in this institution. You are all aware that in the earlier days the Forest Service was charged with "bottling up" the resources of the National Forests and thereby preventing the development of the West. The orgy of land speculation, which eventually swept over the entire nation, originated in the West. Some of it was due to the booster spirit of the region; in California, particularly, much was due to a desire to attract population. No small amount was due to high pressure salesmanship connected with great irrigation projects.
USUALLY such projects involved very expensive engineering works. Only by most optimistic estimates of crop returns and land values could their construction be justified financially. Orchard land, cantaloupe lands, sugar beet lands, alfalfa lands were all quoted in values of hundreds of dollars per acre, and 160 acres of “just land” was supposed to represent a fair stake in any event. So the thing for the man to do who lacked capital was to get himself a 160-acre tract of land—not to use himself, but to sell to someone else. I shall not take up your time by further discussion of our forest homestead and land classification difficulties. I mention it at this time, because the situation in southern Idaho was particularly difficult, and in my dilemma I turned to the one place I knew of where good agricultural land was not a myth but a reality, to Iowa, and in Iowa to its great agricultural college at Ames.

I reasoned that the man in charge of the forestry course at Ames should be well qualified to judge good farm land and to decide where the tall trees should give way to tall corn. I also felt that a Nebraska graduate was sure to appreciate the value and service of trees and would be well fitted to deal justly with both farm and forest. So I entered into negotiations with the young man then teaching forestry at Ames. In short, I turned to the educator and exponent of conservation whose work and accomplishment we honor here tonight.

I was fortunate in securing Professor MacDonald’s services to direct a survey party on the south fork of the Payette River in the Boise National Forest. The narrow strip of bottom land along that river carried a heavy stand of mature ponderosa pine. This land was all applied for by would-be homesteaders in Boise, Chicago, Pittsburgh, and points east—glib talkers and persuasive letter-writing farmers who had never “husked a potato or dug a hill of corn.” But there was also pending an application from a lumberman from Michigan who wished to purchase two hundred million feet of sawtimber from this watershed. This problem of alternative selection, for conservation and perpetuation of existing forests or imaginary farms, was put up to Professor MacDonald to solve. In the light of later developments, the answer now seems simple, but in the befogged mental atmosphere of that period it was not so clear.

MY TIME was so crowded with the many problems of the region that I found little opportunity to go into the Payette problem personally with Mac, either before he started the field work or after it was finished, so he faced the task of formu-
lating the answer unaided, and was left to work out his own salvation, and mine, and the forest’s. Confidentially, the key to such measure of success as I have achieved in the Forest

Service is that I have been willing to accept full responsibility and just as full credit for other men’s good work. Professor MacDonald determined the destiny of those lands and, thanks to his vision and good judgment, the government owns most of the bottom land along the Payette; it is not a region of abandoned log cabins; we do not have to pay half-starved settlers for fighting fires which they themselves start as a means of gaining a livelihood not possible of realization from an isolated tract of stump land unsuited for cultivation and remote from markets. True, the timber has not been sold, but it stands there, unencumbered and ready for use whenever needed, and when cut, it will be marked with less uncertainty of results than if cut twenty years ago. Meanwhile, our nation’s needs have been met from other sources nearer the consumer—good business, good economics, sound conservation.
A proper regard for historical perspective required us to record that Professor MacDonald was one of a group of remarkable young men who turned their attention to forestry during the earlier years following the transfer act of Feb. 1, 1905. They came into the west bearing the torch of conservation from Yale and Harvard, Cornell, Biltmore, Ann Arbor, Nebraska and the earlier schools of forestry. Brilliant, fearless, honest, impetuous crusaders of the “square deal,” as conceived and advocated by Gifford Pinchot and backed by the great Theodore of glorious vision and mighty soul.

TO THOSE “Robin Hood” boys—not limiting membership to a single institution—I am in no small degree indebted for an outlook and vision which has given me three full decades of enjoyable and—I hope—useful public service. It would be unappreciative on my part if I were to fail in this acknowledgment.

As probably the earliest alumnus of this great school to adopt forestry as a career, I ask your kind indulgence while, for the moment, I turn aside from the primary subject of the evening and describe the strange twists of Fortune’s wheel which directed the course of my life into such a strange and then wholly uncharted sea of endeavor.

I was a forest supervisor before the advance guard of “Robin Hood” came into the greenwood of the West. Some of my more ancient auditors may recall that I never “joined” or “entered” the Forest Service, but was “acquired,” like the Philippines. Since it cannot be concealed, I may as well confess to that part of my shady past which is of record, trusting that the unrecorded parts will remain buried in the charity of oblivion. It is vain for me to attempt to deny that I was once an editor. I participated in the wars between the copper kings of Montana, W. A. Clark, Marcus Daly, and F. Augustus Heinze. An unfriendly commentator would say that my part was that of a gladiator or hired Hessian of the Fourth Estate. A friendly Boswell would assign to me the part of what we of the Forest Service today would call a trained public relations man. I came through that war unmarried by six-gun, but I still bear the scars of conflict on my soul and on many a vivid page of memory. I imagined myself a publicist, but actually was merely a pawn in a battle for supremacy between great predatory interests. Through the smoke of battle, in a happily inspired moment, I saw and grasped an opportunity to become a forest supervisor in the General Land Office. It was a political appointment, and I owed
my selection to Congressman Joseph M. Divon, afterwards U. S. Senator from Montana, an ardent advocate of forest conservation and Roosevelt's campaign manager in the crusade of 1912.

DOUBTLESS if I were to admit that I am ashamed of having once served time in the General Land Office of the Department of the Interior, its personnel would get back at me by declaring that they are just as ashamed of it as I am. Be that as it may, after serving in the Department of the Interior from 1903 as supervisor of the Bitter Root Forest Reserve, I was brought over from the General Land Office of that department by the transfer act of Feb. 1, 1905, at Hamilton, Montana, along with some dusty letter files, 17 letter-press copy books, 6 axes,—one without a handle—5 shovels, and a broken Dutch oven and some other miscellaneous property. There was also transferred one young, ambitious and woefully ignorant forest supervisor. The broken Dutch oven was promptly condemned as useless by the first visiting inspector after the transfer, who looked long and thoughtfully at the supervisor as though doubtful as to the procedure made and provided for cases such as his. Doubtless my escape from the same fate as that which befell the decrepit Dutch oven may be attributed to a gap in the hastily compiled instructions of the “New Deal” of that day.

During my first five years following Feb. 1, 1905, I met many of the gallant young sprigs of green who made the history of the early years of the Forest Service. From them I learned what I could. Occasionally I fancied they learned from me. In 1907, as chief inspector of what is now Region One, I had as my assistants F. A. Silcox, R. Y. Stuart, Paul G. Redington and George A. Cecil, four horsemen beyond compare, the most gallant, resourceful, efficient, loyal and trustworthy quartet of foresters that ever went afield. Gladly and proudly I hailed them as “My Boys.” Three of the four became bureau chiefs; the fourth, George A. Cecil, as a leader in conservation circles in southern California, has filled a place no less important and honorable. I am indebted to each of these four horsemen and many others of similar traits and training, but of less spectacular careers, for much of the thought and vision which has enabled me to participate rather intimately in the inner councils of the forces of conservation for a full generation.
Service as contrasted with the age of the pre-Raphaelites which I have just described. It is to pay tribute to the work done by Professor MacDonald during the nearly a quarter of a century which has intervened since that day of economic pioneering that we are gathered here tonight. As the Nestor of Ames Foresters, I consider it an honor and privilege to voice briefly and sincerely our appreciation, admiration, and respect. The Ames School of Forestry is his monument. Rarely is it within the power or province of one man to contribute so largely to the foundation and perpetuation of a great public institution.

THIS school is numbered as one among the fourteen schools in the United States which “adequately cover the field of forestry instruction.” Such is the rating which has been given it as the result of a study by the Society of American Foresters of all forestry schools in the Union. This is the more remarkable when due consideration is given to the fact that this has been achieved in a state without commercial forests, without the backing of a lumber industry, and where conventional agriculture overshadows all other occupations. Talk about tolerant species! The fact that this school has been able to survive and thrive in the shade of such dominant interests, to my mind, places it and Professor MacDonald in a class by themselves, and is evidence of a grim courage and unwavering faith. No other forest school started in a prairie state has ever survived, to say nothing of achieving national recognition.

COMPARISONS are odious, and I would not utter a single word which might be construed as reflecting in the slightest degree upon the merit of any one of the other thirteen approved schools of forestry. Yet justice demands that we credit the Ames school with the fact that its purpose has been to serve the educational needs and aspirations of the young people of the state. It has not been promoted by rich endowments; it has not educated foresters in order that the federal government, the states, or commercial lumber interests might secure trained specialists or that as timber land owners they might obtain skilled managers. The springs of the existence of this school of forestry arise in the urge to the avocation by the seeker after knowledge and an urge to service, and not from the urge of employers or the plans of an industry seeking profits.

This school does not owe its existence to the pressure of land economics or the commercial needs of the State, but to the
intellectual needs of each succeeding generation of its young people. I have a very vivid recollection of the valiant fight which Professor MacDonald waged to save it from destruction when it was proposed in the name of economy to discontinue the forestry course because Iowa had no great lumber industry that needed to employ its graduates. In that struggle Professor MacDonald had the unwavering support of former President Pearson, just as he had always been loyally supported by every president of Iowa State College and by a loyal and sympathetic faculty down to this day of honorable maturity.

IT HAS been an inspiration to be with you at this time. The presence of Society members from neighboring states is not only evidence of your appreciation but of our common ideals and objectives. I shall not take advantage of your helpless condition to bore you with a sermon or irritate you with a lecture. I shall not attempt to tell you how the Society, this school, or this nation should be run. Naturally, I feel confident of my ability to so enlighten you if I elected to do so, but since it might not be appreciated, I shall carry the secret with me to the grave.

The evening wanes. I promised the program committee my talk would be brief, but I cannot resist the temptation to dwell for a moment on the lengthening shadows of life before I say good night. To Him who orders all things well, I owe a great debt of gratitude. Life has not been all joy, nor yet all sorrow. I have shared the sunshine and shadow, war and peace, toil and rest. Life embraces all emotions and its incidents are infinite in variety. Time once passed can be lived over again in memory only. Yet if it were given to me to have planned my life in advance and order things just as I would, I would ordain that I should be born in a log cabin on the banks of the Des Moines River in Humboldt County, Iowa, while yet the stream ran clear and teemed with fish, while the unbroken prairie riotous with flowers stretched away from my father's field as far as the eye could see; to have heard the clatter of myriad waterfowl on their spring and fall exodus; to have learned how to labor in the field and feel the joy of doing a man's part in replacing waving fields of sloughgrass with rustling fields of corn; to have graduated here at Ames in '96; to have shouldered a Springfield rifle and enlisted as a private soldier in '98; to have become a forest supervisor in western Montana in 1903; to have been transferred to the Department of Agriculture in 1905; to have married the girl of my choice that same fortuitous
year and to have lived with her and my work happily ever after; to have become chief inspector of Region One in 1908, supervisor of the Sequoia National Forest in California in 1909, Regional Forester at Ogden, Utah, in 1910; to have directed the segregation of 160 million acres of federal lands between 1914 and 1919 and their permanent dedication to forestry; to have served as Associate Forester for over fifteen years under three great chiefs without an unkind word; to have had the joy and privilege of being here with you tonight, and to here and now, as an alumnus of Ames, acknowledge the debt of gratitude I, along with many others, owe to the beloved instructors of my day to this great institution, to Dr. Beardshear, Dr. Stanton, Dr. Pammel, Dean Marston, Dean Roberts, Dr. Osborne, Dean Curtiss and others equally beloved and cherished in the rosary of my recollections. With these giants of the past, Professor MacDonald will take an honorable place in the memories of the young people for whom he has supplied equal visions, equal ambition to advance and equal courage to persevere.

I close by extending to him and to each of you individually, my best wishes clothed in the words made immortal by Joe Jefferson in his character as "Rip Van Winkle": "Here's to your health and your family's good health; and may you all live long and prosper." Good night!
OPPORTUNITY

“With doubt and dismay you are smitten,
You think there’s no chance for you, son?
Why, the best books haven’t been written,
The best race hasn’t been run,
The best score hasn’t been made yet.
The best song hasn’t been sung,
The best tune hasn’t been played yet.
Cheer up, for the world is young!

No chance? Why, the world is just eager
For things that you ought to create;
Its store of true wealth is still meager,
Its needs incessant and great;
It yearns for more power and beauty,
More laughter and love and romance,
More loyalty, labor and duty;
No chance? Why there is nothing but chance!

For the best verse hasn’t been rhymed yet,
The best house hasn’t been planned,
The highest peak hasn’t been climbed yet,
The mightiest rivers aren’t spanned.
Don’t worry and fret, faint-hearted,
The chances have just begun.
For the best jobs haven’t been started—
The best work hasn’t been done!”

—BERTON BRALEY.
Central.
Emergency Conservation on Indian Lands

By J. P. KINNEY

THE commercial forests on Indian reservations within the United States cover approximately 6,500,000 acres. Over 5,000,000 additional acres may be classed as woodland because of a growth thereon of pinion, juniper and other non-commercial species. Nearly 40,000,000 acres are classed as being primarily grazing lands. While the amount of forest and grazing areas comprises but a small percentage of the lands of such classification in the nation, such land is of great economic importance and forms a substantial portion of the total area within such States as Arizona, New Mexico, Oklahoma and South Dakota.

Prior to July 1, 1933, very limited funds had been available for the development and protection of forest and grazing lands on Indian reservations. In fact, for protection from fire, tres-

*Indians building truck trails.*
pass, insects and disease, the amount available in any one year had never exceeded an average of one-half cent per acre and the amount available for all forest and grazing protection, administration and improvement purposes had not exceeded one cent per acre. It was well recognized that such expenditures were entirely inadequate, but urgent efforts to secure larger appropriations of federal funds were unsuccessful.

The Conservation program, as organized by the Roosevelt administration in April, 1933, brought to the Indian Service a golden opportunity to improve Indian lands. Immediately after the approval of the Emergency Conservation Act of March 31, 1933 (48 Stat. 22), the Indian Service took steps to claim a part of the benefits that the Act contemplated. Three months passed before all details for Indian participation in the Conservation plan could be worked out, but immediately after July 1, 1933, thousands of Indians were put at work on physical improvements to forest and range lands on Indian reservations.

Because of the dependent condition of most Indians and the great distress that existed among the members of many tribes due to the economic depression and the drought of the preceding three years, the regulations as to E. C. W. on Indian reservations were greatly liberalized. The age requirement of 18 to 25 years was waived and all Indians, physically fit, who desired to work were enrolled and as many of them placed on active duty at one time as could be accommodated. To meet the relief situation on various reservations enrollees were rotated for periods of ten days, two weeks or a month, and during the first six months as many as 12,000 Indians were on the payrolls at one time.

A large number of foresters, engineers, and other technicians were employed, but to as great an extent as possible Indians were placed in positions of sub-foremen and foremen and were advanced to project managers and other supervisory positions as soon as they had demonstrated their ability to handle large groups of men or perform duties of special responsibility. A special effort was made to train Indians as truck drivers, tractor drivers, grader operators, powder-men, compressor operators and mechanics with a view to fitting them for such work in the commercial world after the E. C. W. program is completed.

During the period from April 1, 1933, to June 30, 1936, over $31,000,000 has been allotted to the Indian Service for E. C. W. activities on Indian lands and it is expected that ap-
proximately $6,500,000 will be received during the period July 1, 1936, to March 31, 1937. All phases of the Conservation Work have been carried out under the direct supervision of the Indian Service, the Army not having assumed responsibility for the operation of camps on Indian reservations. In only a few instances have the enrollees on Indian lands been concentrated in the regulation camps of 200 men each. In many instances camps of from 30 to 75 men have been maintained by the Indian Ser-

![Chippewa Indian in tribal costume.](image)

vice, but in other instances the men have established their own camps, often accompanied by their families, and frequently small crews have gone out daily from their regular homes to the work projects. The consent of Director Fechner to these forms of organization has been of great advantage in the accomplishment of effective work results. These advantages were offset by certain disadvantages in particular cases.
UNDER the Emergency Conservation program on Indian reservations there had been completed prior to December 31, 1935, the following projects:
Truck trails, 4,847 miles.
Telephone lines, 4,127 miles.
Fences for stock, 7,850 miles.
Springs developed and reservoirs built for stock watering purposes, 5,450.
Forest stand improvement, 590,633 acres.
Insect pest control, 490,000 acres.
Rodent control, 9,878,380 acres.

The above classifications include only those phases of the work that have been most extensive. The activities on Indian lands have embraced almost every type of conservation of natural resources, including the protection of game, fish and other wild life. Many streams and some of the larger dams have been stocked with fish, streams have been improved, forest and prairie stocked with pheasants and antelope and on restricted ranges within the Crow Reservation in Montana and the Pine Ridge Reservation in South Dakota small herds of bison have been restored. Extensive planting of forest trees has not been undertaken because of the difficulty of obtaining seedlings and the fact that forest regeneration is generally very satisfactory on Indian forest lands. The existing forest nursery on the Red Lake Reservation in Minnesota has been enlarged and small nurseries established at Lac du Flambeau, Cheyenne River, Rosebud, Rocky Boy, Neah Bay and Yakima Reservations.

DURING the first year especial emphasis was placed upon prevention and soil conservation in Arizona, New Mexico and Oklahoma, and especially effective results were accomplished on the Mescalero Reservation in New Mexico and on Indian lands in Oklahoma. Subsequently the Soil Conservation Service took over this type of work on the Navajo and Pueblo lands in Arizona and New Mexico and late in 1935 erosion control on the Shoshone Reservation in Wyoming was assumed by the same organization.

The Emergency Conservation Work plan has been of incalculable advantage to the Indians. At a time when they were unable to support themselves adequately on their own lands because of the most severe drought within the memory of the oldest men and when it was impossible for them to obtain outside employment because of the economic depression, they have
been afforded employment on the reservations at a living wage through Conservation activities. The physical assets of the reservations have been greatly improved and the Indians aroused to a realization of the possibilities of economic independence through personal effort. Men and women experienced in Indian administration are not unmindful of the unfavorable tendencies of a program that takes Indians away from their farms or other places of occupation and substitutes a wage economy for one based on individual initiative and responsibility. However, the great majority of the Indians who have been engaged in Conservation Work were practically in a condition of economic inactivity when they were accepted for such work and every practicable precaution has been exercised to overcome the formation of a habit of dependence on the Government for continued support. It is confidently believed that the Conservation program has actually improved greatly the mental and moral outlook of the Indians and advanced them toward the goal of industrial independence. This industrial independence has been the great desideratum in Indian Affairs during the century and a half since the Federal Government has been wrestling with the Indian problem. If Emergency Conservation contributes as materially to such advance as now appears probable, the $37,000,000 allocated to the Indian Service will have been wisely invested from a national standpoint.

These little fellows have a father at work on I. E. C. W. projects.
Forest and Erosion Concepts

By A. L. McCOMB
Instructor of Forestry, Iowa State College

MUCH has been said within the past few years about soil and water conservation and especially about the relations between forestry and the conservation of these resources. For this reason it may now not be out of place to review some of the fundamental conceptions regarding soil erosion and the relation of forestry to this process.

To better understand how forests are involved in the conservation of soil it will be of value to briefly describe the forces which act, either to hold the soil particles together, or to cause them to separate and be moved from their original resting place.

The forces which tend to bind the soil particles together are found chiefly within the soil itself. Soil is made up of a multitude of small weathered rock and mineral particles interspersed with organic matter. The inorganic particles in the soil are designated according to size, the largest being termed small gravel; the intermediate ones, sands and silts; and the finest, clays. Each soil particle is surrounded by a water film of variable thickness, and within this water film are found mineral elements and gasses in solution. The binding force within the soil is generally considered to be this water film. The thinner the film and the smaller the particle it surrounds, the greater is the force that is exerted toward holding the soil particles together. For this reason soils having high percentages of clay or organic matter, either of colloidal or non-colloidal nature, resist erosion more than do soils with larger percentages of sands and silts.

BEFORE a soil erodes, either there must be enough force to cause large aggregates of soil particles to move, or the water film around the individual particles in the aggregates must increase in thickness until free water appears and the co-
hesive force between adjacent particles is lost. When water is applied to a clay soil, a long time elapses before the soil becomes saturated to the point where free water appears and cohesion is lost. This is due to the large volume of water which a clayey soil will hold and also to the fact that the particles are so close together and the water film is so thin and extensive that saturation is slow in being accomplished. Sandy and silty soils generally erode much faster than clays. Under conditions of moderate run-off silts will probably erode faster than sands because silts have very little of the cohesive properties of clays and do not have the mass of the individual sand particles. When exposed to the action of large volumes of rapidly moving water both sands and silts erode readily.

Other forces which are a part of the binding force in the soil result from the chemical and physical properties of the soil colloids and from the mineral bases which are absorbed on these colloids.

Opposed to the forces binding soil particles together is another group of forces tending to cause individual soil particles to separate and move away from their original resting place. These forces arise from either wind or water. Only water will be considered here.
WATER as an eroding force acts in a number of ways. First, as has been shown, water seeps into the soil, enlarges water films, reduces cohesion between soil particles, and causes individual particles to "float" separately. Secondly, free water moving over the surface of the soil causes the loosened soil particles to be carried away, either in suspension, by rolling or sliding, or by a process known as saltation. Lastly, the beating effect of precipitated water aids in breaking up soil aggregates and loosening individual soil particles.

The capacity of free water to cause erosion as it moves over the soil surface varies. The size of the particle which running water can move is generally considered to vary as the sixth power of the water velocity. The actual soil carrying power in terms of quantity varies, however, as approximately the fourth power of the velocity; that is, doubling the water velocity increases the carrying capacity sixteen times. The velocity of the water which causes erosion increases or decreases depending upon the steepness of the slope over which it moves and upon the volume of water flowing. Increasing either the steepness of the slope, or the volume of water, or both, increases the water velocity and hence its eroding power.

VEGETATION can reduce erosion either by increasing the cohesion forces within the soil, as illustrated by increasing the organic content, or by decreasing the forces causing the separation of particles. Generally vegetation acts to a greater degree in the latter manner. The magnitude of these soil dispersing forces is closely related to the manner in which water and precipitation is disposed of. As stated by Forsling, formerly director of the Intermountain Forest and Range Experiment station, rain and snowfall on vegetated areas is disposed of as follows:

1. Part of it is intercepted by vegetation and litter and is evaporated.
2. Part of it enters the soil.
3. Part of it goes off as run-off; this being the part that causes erosion.

VEGETATION generally directly affects erosion by reducing the amount of run-off and by lessening and distributing the direct forces of falling rain and running water. This is accomplished in the following ways.
1. Vegetation causes raindrops to lose their impact before reaching the soil. The vegetation shatters the rain, and distributes it in the form of a mist, thus keeping aggregate soil particles from being split up.

2. Vegetation intercepts part of the rain, delaying its passage to the ground and allowing part of it to be evaporated. This action reduces run-off and delays saturation of the soil.

3. Vegetation absorbs and transpires large quantities of water thus reducing soil moisture content and enabling soil, during periods of rainfall, to absorb a greater quantity of water.

4. Vegetation, through dead plant bodies, increases the humus content of the soil and as a result increases porosity, soil water percolation rates, and absorptive capacity.

5. Vegetative bodies often act as small check dams across the path of water flow and result in the development of small hydrostatic heads of water. These reduce the velocity of the water close to the surface of the soil and assist absorption and percolation by increasing the effective time the water is on the ground.

6. Vegetative bodies lying on the ground act as a roof between soil and rain, the frictional forces of the run-off being expended against the vegetational debris and not the soil particles.

7. Litter and duff left by vegetation filter out soil particles that might otherwise settle into the soil and clog up the percolation channels thus reducing absorption and increasing run-off.

8. The root systems of vegetation act as soil binders.

The efficiency of vegetation in controlling run-off and erosion depends upon the height, volume, and density of the canopy, upon the nature and extensiveness of the root system, and upon the type of soil mantle which that particular type of vegetation affords the soils. Forests, on areas where they normally are the climax vegetation, are generally the most effective in controlling erosion because (1) they have the largest volume of canopy; (2) they have layers of secondary vegetation close to the soil and consisting of herbs and shrubs; (3) they have a layer of litter and duff which further protects the soil, prevents early freezing and allows greater percolation;
and (4) they generally have soils of looser construction, greater pore space, and deeper percolation channels. In areas where grass is the climax vegetation this type of vegetation will probably be the most satisfactory to use for erosion control, while on transitional areas combinations of forest trees and grass will no doubt be most effective.

In general it is believed that grass is effective in erosion control by virtue of the greater mass of fibrous roots in the immediate surface soil, the absorptive nature of the soil if the area is not grazed, and the action of the dead and living grass blades which restrict the surface water flow and act as a buffer between soil and run-off water. Conversely, forests are efficient because the rainfall is slower in reaching the ground and it is prevented from having direct contact with the soil by the litter and duff. In addition most true forest soils will absorb more water, and at a more rapid rate, than soils supporting other vegetation. Hence, forests conserve soil by reducing the amount of run-off. This is accomplished chiefly by increasing the amount of water absorbed. Forests thus conserve soil by conserving water.
The West Point of Region Nine

By DONALD R. BALL '28
Assistant, Region Nine Training School

The West Point of Region Nine is the name given to the Region Nine Training School which was established in June, 1935, in northern Wisconsin for the training of men in the junior forester, assistant ranger, and forest ranger grades.

Training schools for men in the forest ranger grade are not new in the U. S. Forest Service. Region two has maintained such a school near Dear Park, Colo., for over 10 years. Region five has a school near Quicy, Calif., and Region six has also started a similar school in recent years. These schools have been held more or less periodically depending upon the number of new men to be trained. Ordinarily the schools have been operated for a period of about six weeks each fall for the purpose of training the new men who have been appointed during the year. Since the establishment of Region Nine in 1929, the need for a training school has been strongly felt and recommended by the supervisors at their annual meetings with the regional forester. Funds for the establishment of such a school were not to be had. Hence the project was postponed.

In 1933 the funds made available by the New Deal conservation legislation started a great expansion program in this region. In 1929 the region embraced 5 national forest areas in Minnesota, Wisconsin and Michigan. By February, 1935, this had increased to 15 national forest areas in North Dakota, Minnesota, Wisconsin, Michigan, Ohio, Indiana, Illinois, Iowa and Missouri. At this time it was estimated that some 700 technically trained foresters were employed as foremen in C.C.C. camps and as rangers and assistant rangers on these areas. This group had received but little actual experience and had little understanding of the problems and conditions in other parts of the region. The need for a training school to bridge the gap between the technical training these men had received at the various forest schools and its practical application in the forest work of this region was apparent.
In addition a large number of new manuals and handbooks were being issued during the period. This group of books set forth the regional policies and objectives in all Forest Service activities and brought all existing instructions together in compact form. The new men with their numerous and varied duties, found little opportunity to review these texts and had considerable difficulty in grasping the interpretation and scope of the instructions. A region wide master plan was also started early in 1935 and instruction in its preparation and correlation with all other activities was of vital importance.

In the summer of 1935 funds were obtained for the establishment of a school. Mr. L. A. Pommerening was appointed acting director. An abandoned C.C.C. camp near Three Lakes, Wis., was remodeled into suitable quarters, and on June 25, 1935, the first session opened with 25 of the more promising technicians of the region in attendance.
The initial training course covered a period of 5 weeks of lecture, discussion, laboratory and field work. At the end of this time a new group of men was enrolled for a like period. By late fall 4 groups had taken the 5-weeks course. At first the teaching staff was made up of men from the regional office and from the various forests. These instructors were detailed to the school for short periods of time. In October, 1935, L. A. Pommerening, acting director, and Donald R. Ball, '28, assistant, and Clarence D. Chase, M. S. '31, assistant, were assigned to the school as the permanent staff.

"The Morey," winter quarters for the school.

In November, 1935, the school was moved to the Morey Resort near Eagle River, Wisconsin, for the winter. The main resort building afforded ample room for the housing of thirty trainees and was well equipped with an office, lounge room, dining room, class room and recreation room. The curriculum was revised and lengthened to a 6-weeks course designed primarily for men in the ranger and assistant ranger grades. The curriculum now includes courses in master plan preparation, forest surveys, land use planning, fire control, reforestation, acquisition, technical management, wildlife management, timber stand improvement, public relations, recreation, engineering, and administrative work plans. No attempt has been made to duplicate any work given by the respective forest schools.
TO DATE four sessions of the technicians’ school have been held, and the third session of the rangers’ school is in progress. The forest schools represented by the men who have attended the seven sessions are shown by Table I.

Table I

<table>
<thead>
<tr>
<th>School Attended</th>
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<tr>
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<td>B.S.</td>
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<td>Michigan U.</td>
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<td>Yale</td>
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<tr>
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<tr>
<td>187</td>
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</table>

IOWA STATE Foresters have been well represented. Following is a list of those who have attended the school to date:

George A. Turney..............'27  Charles M. Swanson..............'32
Fred E. Boeckh...............'28  Helmer Anderson..............'32
Samuel M. Battel.............'28  W. D. Giffin....................'32
Lawrence Battey..............'29  W. W. Intermill...............'32
Edward M. Howell...............'29  Arthur Schafer..............'32
Karl E. Moessner..............'30  Lawrence M. Gibson........'33
Luther B. Burkett.............'30  William L. Hatch...........'34
Edward N. Lee..................'30  Gerold M. Schroeder.....'34
J. E. Longmoor.................ex '30  Keith W. Dorman........'34
Eliot Zimmerman..............'31  Darold F. Newville.......'34
Harold S. Coon...............'32

THE open discussion method has been adopted in the presentation of the courses, and all trainees are required to enter into the daily discussions. By the use of this method it is possible to clear up all questions regarding regional Forest
Service policy. All trainees act as discussion leaders at some time during the training period and thus receive experience in group leading and discussion. Each subject is attacked individually, i.e., the instruction and discussion of a subject is covered in its entirety before a new one is started.

After a subject is completed, a written examination of the so-called “objective type” is given. The purpose of the examination is not only to find out what the trainee knows but also to point out what he does not know so that he will be able to improve himself.

Actual training by doing is stressed where possible. Due to the wide variety of conditions, both ecological and sociological, found in the region, this method of training is limited in its application. However, it is particularly well adapted to such courses as the master plan and the administrative work plan in which actual plans are compiled by each trainee.

Each group of trainees is self-governing. At the beginning of every session a president, vice-president, secretary, and house manager are elected. These officers govern the group, subject to the rules and regulations prescribed by the director. Each Tuesday night is devoted to a general class meeting at which regular class business is discussed, songs are sung, and short prepared talks on assigned subjects are given. The purpose of the talks is to give each individual, training in public speaking.

At the close of every session a personnel chart of each man is drawn up and mailed to the supervisor of the national forest to which the individual is assigned. The chart points out the strong points so that additional training and follow up can be given on the Forest as needed.

The value of the Training School is five-fold:

1. It brings about a uniform understanding and interpretation of regional policies and objectives as well as their application in field activities.
2. It provides uniform training of the individual for the job.
3. It permits the immediate weeding out of undesirables, thereby giving the individual an opportunity to find a field of endeavor to which he is more adapted.
4. It gives each individual a better appreciation of the diversification and problems of the region.
5. It develops the ability to train others.
Thinnings

By J. A. LARSEN

Professor of Forestry, Iowa State College

Thinnings may be considered the playthings of the forester, the essence of silviculture and the touchstone of economic forest practice. The abundant young forests, east and west, both in the United States and Canada, offer well-nigh unlimited opportunities for thinnings today. Records of varied and interesting stand improvements are available mainly through the pages of the Journal of Forestry.

Most of the thinnings on record are in the nature of experiments, and all but a very few have been confined to evergreen stands. Foresters here and there have expressed their eagerness to begin this important phase of real forestry practice. In some cases thinnings have been begun as a part of research projects carried on by one or another of the forest experiment stations. However, very few records from these have so far been published.

Encouraging beginnings, to be sure, but we have by no means passed the preliminary experimental stage whereby we hope to formulate plans and crystallize methods for extended and continuous thinning practices in the far-flung forest regions of the country.

It is the author’s impression that in the earlier installations of thinning plots, like those in eastern white pine, southern white cedar, and southern pines, we have followed too closely or too literally the European methods, particularly the Swedish system of thinning from below. Also, too much emphasis has been placed upon the cost and the immediate or very early response in growth, with insufficient attention given to form, rate of growth, quality of the wood, the products obtainable, or the effect upon the remaining trees or the site itself. This would be the natural trend in quasi- or semi-scientific investigations, if we may use such terms.

Of course, if the attention is focused entirely upon the costs
and ensuing financial returns rather than results enumerated above, no arguments would be accepted. The only conditions which must then be satisfied would be that the trees exist in sufficient number and size for easy sale at locations not too far removed from the place of utilization. The chosen tree method, or spot thinning, by which certain promising trees are liberated from competition, is justified on economic grounds only and is also experimental; what the results will be along more technical lines, no one knows. It is rather surprising that an unproved process has found such general and unreserved application.

**Grade B or medium thinning from below. Western White Pine, Kaniksu National Forest, Idaho.**

**IF THINNINGS are made in the interest of research, we face an entirely different situation, and the particulars which should then be weighed and studied are: the proper time to begin in stands of varying age, density, and site conditions; the spacing in relation to growth, pruning, stem form and development; the pick-up by trees of different crown classes; the grades, or systems, of thinnings applicable to tolerant or to intolerant**
trees or to mixtures; and finally, the future object of manage-
ment, or what we wish to produce as an intermediate as well as
a final crop. Most certainly the degree of thinnings must be
made to serve these purposes in a very significant way.

It is evident that there is a wide variation as to the time
thinnings should begin in the young stands, especially with re-
spect to tolerant or intolerant species, and natural stands or
plantations. In order to clarify the issue we should agree upon
four periods for treatment of immature forests: the first period
when the age is less than 15 years; the second when from 15 to
30 years; the third from 30 up to 45 years; and the fourth
reaching from 45 to 60 years.

G E N E R A L L Y, thinnings which are made during the first of
these periods have the greatest influence in shaping future
form of the trees. Thinnings made during the second interim en-
tail considerable labor cost, but are perhaps the most productive
of results. It is the plastic youthful period in the life of trees
generally. At this time the removable material is seldom sal-
able. During the third period every thinning should pay its own
way. Thinnings which are begun during the fourth period
might in most cases involve removal of a proportion of the larger
or dominant trees in order to insure adequate returns.

It is beginning to be recognized that in natural stands the
thinning out of the lower crown classes results in very little
increment of the remaining trees, and that thinnings from be-
low among very tolerant species yield very small material even
during the second period. For very intolerant species, on the
other hand, the third period is ordinarily too late to begin. (3)
Naturally-grown young forests are almost invariably denser
than the planted; for this reason the former are available for
experimental thinnings at a much earlier age than trees in
plantations. A low form of thinning might work best in a for-
est of purely intolerant species or one composed entirely of tol-
erant trees, while a high form, or crown thinning, would be
applicable to intolerants over tolerants.

In thinning operations more attention could well be given
to the size of the crown in relation to future growth or pick-up
after the treatment. Randals (6) has thinned western yellow
pine in the Southwest. Though the products are unsalable, his
work is of great interest in showing the response in growth
according to definite crown classes. This strikes a new note in
thinning research and points the way to more careful planning
in these studies and more intelligent interpretation of the re-
sults. The crown classes designated as good showed, after five years, a diameter growth up to 0.83 inches; those designated fair, up to 0.48 inches; and those called poor not more than 0.31 inches.

COLOR is lent to this classification by the recent crown designations proposed by Craib (2) and Chalk (1). In close measurements of three trees of Douglas fir of the same age and growing on the same site, Chalk found that in the dominant tree with a crown length of 18\(\frac{3}{4}\) feet, wood of the outer four rings indicated a weight of 6,500 grams per unit used; in the medium tree, with crown length of 16\(\frac{1}{3}\) feet, the wood produced in the outer four rings weighed 4,426 grams, and in the suppressed tree, where the crown length was 8 feet, the wood weighed only 2,839 grams. These are comparative figures. When all of the needles from these trees were stripped, their oven-dry weight lined up in the following order: 6.4 grams, 2.0 grams, and 1.0 grams. (Reducing the last to 1.0.)

The system ordinarily used in classifying trees on the thinning plots should be carefully chosen. It is customary to place them in crown classes according to dominance and give some further key to the form or condition of the stem. The first part of this attempted crown classification is rather inadequate. It provides no means of expressing vigor, vitality, or ability to pick up after liberation. Craib (2) has recently proposed a new and complete scheme for rating the trees, in thinning practice, the essential basis being that of crown vigor. After all, whatever has happened or happens in the future to a tree, its rate of growth after thinning will be determined mainly by size of crown and the pick-up by its vigor.

THREE major classes, A, B, and C, are proposed. In class A are tolerant trees which are capable of developing full, deep, and long crowns. In class B are those of medium tolerance, and in class C would fall the intolerant species. The trees falling within any one of these three main classes are further rated from 10 to 1, according to the length of the crowns on the stem. Those rated 10 have the greatest possible long and full crowns and those rated 1 have the thin, short tufts at the upper part of a spindly, whip-like stem. Furthermore, each of the three major divisions, A, B, and C, may be rated according to the density of the foliage.

This may seem like unnecessary refinement, but it is obvious that a scale to be of use must provide for all possible classes,
just as in a library all manner of books must be filed with ease without unduly straining the system. For intolerant trees, there would perhaps not be a call for as many subdivisions as for tolerant species.

Spacing is another matter which claims our consideration. Which is to be preferred; laxity in regular spacing, with careful attention to individual trees regardless of their position with respect to others, or more or less regular spacing, thereby sacrificing certain promising trees? Three plots laid out in Coast Douglas fir at Wind River, Washington, 1919, have been written up by Meyers (4). The guiding principle in these was to leave the trees at a definite spacing, regardless of kind. These showed an increase since 1919 up to two feet in height per year for thinned series and only 1.4 for the unthinned. It was concluded that a regular-spaced thinning in which any species of trees are left has no advantage over one where the more advanced trees are reserved regardless of spacing. That is, a lax or approximate spacing where the better trees are left has much merit.

There has been considerable discussion as to what degree of

Grade C or heavy thinning, Western White Pine, showing space left between crowns.
thinning will result in the strongest or most usable wood. A rapid rate of growth is not always to be preferred. In evergreens, a medium and uniform rate is best; in ring porous species a rapid growth creates the heaviest and strongest wood and yet, withal, a respectable degree of pruning and height growth must be the rule. In diffuse porous hardwoods rate of diameter growth has little influence on the quality of the product.

In order to thin with discretion, we should know something about normality. What criteria shall be used in judging normality? How would a forester ever obtain absolute proof of this except from the scrutiny of stands thinned in varying degrees? Stem analysis may be going out of use in mensuration generally, but it must be revived in the study of form and rate of growth produced by thinnings. W. H. Meyer and Schumacher (5) have made valuable beginnings in this field. For Douglas fir, age 40 to 45 years, a normality of 80 percent on the basis of total cubic volume will increase at the rate of 4 percent in a five-year period. When, however, normality reaches 106 percent, it will increase at the slow rate of 1 percent. It would come to a balance or complete standstill when at 110 to 115 percent. The approach to normal varies with species, spacing and site quality. It will give the silviculturist and the mensuration specialist much mental exercise.

It appears that we have yet some distance to cover in perfecting our thinning studies and practices before we will feel the ground firmly under our feet or before we have assurance that we follow the right track. At any rate, we have made a brave start. What we need is the most painstaking planning before more installations are made, and a masterly analysis of measurements when they become available.

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President Franklin D. Roosevelt
President Roosevelt and His Contributions to American Forestry

A Little Glimpse of the President and How he is Practicing What He Preaches

By NELSON C. BROWN
Professor of Forest Utilization at the New York State College of Forestry at Syracuse University

FOREWORD

It is very pleasant to be asked to contribute an article to the Ames Forester. This brings back many happy memories of very happy days in 1911-12 spent with a grand boss, teacher and administrator, my old friend MacDonald. And the Ames boys were always a great bunch. I have met them in the high Rockies, in the swamps and pine plains of the South, the big timber of the Far West, and they are carrying high the banner of Ames throughout the country. They are making a reputation for the school, and I know MacDonald and every other member of the faculty and friend of Ames is proud of them.

PRESIDENT ROOSEVELT'S contributions to the upbuilding and development of American forestry will probably be accurately measured only in retrospect. After he has been out of office for a number of years, 10 to 20 perhaps, we shall be able to appraise much more fairly and adequately his part in the development of American conservation. In the same way Lincoln was not understood or appreciated, neither during his term of office as President nor in the immediate succeeding years.

As President Theodore Roosevelt in timely fashion made significant contributions to the development of American forestry by setting aside over 100 million acres of national forests, and thereby, at the instance of Gifford Pinchot, then Chief Forester, made it possible to bring into being our present great national forest program, so President Franklin Roosevelt has contributed in his own way to the consolidation, refinement and further development of our national forestry program.

For many years American foresters have been wanting to do
a great many things in our open and waste places, as well as in our forests, which, because of lack of man power and available appropriations, it has been impossible to do. Our national forest development was practically at a standstill for several years because of lack of funds available to do many things such as tree planting, improvement thinnings, road building, fire protection, etc., which are now being done. When history is written in the years to come, the CCC program will be recorded as one of the great accomplishments of the Rooseveltian regime, beginning in 1933.

For over 20 years the President has been planting trees on his private farm at Hyde Park along the beautiful shores of the Hudson just above Poughkeepsie. From his old Dutch Colonial home erected in 1810, one can look over the entire rowing course of the Poughkeepsie regatta along the historic Hudson. He enjoys rambling around in the woods and planting trees on his farm. There are over 600 acres that are devoted to forests or are growing up in natural re-seeding or in planted forests. As early as 1915 he began planting yellow poplar, white pine, Norway spruce, Scotch pine and other species on his place. When he became Governor of New York he advanced his forestry program. Each year from 5,000 to 40,000 trees have been planted and a total of 150,000 trees, chiefly Norway spruce, white pine and Norway pine have been put in. Besides these, European and Japanese larch, yellow poplar, black walnut and Japanese pine are used as well as some Ponderosa pine, Sitka spruce, and other species. He, in fact has a veritable arboretum of both domestic and exotic species arranged in plantation experiments rather than in individual tree groupings. His favorite tree is the yellow poplar, which he has planted about his home place, and he has secured strains of several different seed origins to determine which does best under the particular conditions of soil and climate on his place.

He is also sincerely interested in the possibility of growing Christmas trees. One of his spruce plantations, spaced 3 ft. by 3 ft., now about 10 years old, is almost ready for cutting, and in the nearby metropolitan market of New York City, which is only 75 miles away, there is an excellent market available for all of the Christmas trees which are normally brought in from 300 to 500 miles away, from Maine, New Hampshire, Vermont, and eastern Canada. The President believes in practical forest management, and by that I mean cutting trees when mature,
and getting a profit out of them, as well as in pruning and thinning out his young growing stands to improve their condition and to increase their rate of growth. With this in view, he has sold large quantities of crossties to the local railroads, piling for local construction projects, and sawlogs and other specialized forms of forest products, as well as large quantities of cordwood. He has cleared swamps of poor hardwood growth in order to replace these stands with quicker growing conifers. In doing so he has been able to cut fuelwood at a profit.

**MUCH** of his 1,200 acre farm is naturally wooded. On the steep Hudson River slope is a primeval grove of hemlock whose pristine beauty is unmarred by the axe. This grove is to be preserved for posterity as an illustration of what our original forests looked like when the thrifty Dutch forefathers first settled these shores. The President’s most impressive and stately stand of timber, however, is the white and red oak and mixed hardwood forest, including some ash, hickory, beech, maple, elm and basswood. By judicious and careful cuttings the beauty and the capital growing stock of these timber stands have been preserved. One might also imagine he was in the stately forests of Epinal in France, or perhaps in one of the better known forests of Fontainebleu or Compiegne. Here and there on the Roosevelt place, agriculture has outlived its usefulness. It does not pay to keep some of the lots under the plow so the President has been in the vanguard of the great reforestation movement in New York State by planting trees. Here is a real problem in land use and it is typical of a great many thousand acres in many parts of New York State which were once cleared of timber and which should never have been put under the plow.

**THE** question of who is responsible for the thought behind the CCC program has often been debated. This is to be credited directly to the President. I had a long chat with him in Albany in December, 1932, when he outlined in great detail how he would have the foresters and the army work together to do a lot of things in the woods that should be done and should have been done years ago. He announced in his Chicago speech in June, 1932, that he would put half a million men to work in our woods to improve their condition. He has done that very thing in the CCC, and in addition he has put forestry very definitely on the map in many other ways. He has been charged with being visionary, and yet he has a very intimate and accurate
grasp of a number of our real forestry problems. It was through his efforts and largely on his personal initiative that the Natural Resources Board was created and the Plains Shelterbelt Project started. Forestry became an integral part of the TVA program, and now we find forestry and soil conservation being intimately related with our whole agricultural, soil erosion, game management and flood control problems as they should be. He has provided for vastly increased funds for land acquisition for national forests, and his CCC and other programs have stimulated an important expansion in the acquisition of forest lands, game refuges and parks by the various states throughout the nation. In other words, our forestry house is at last being put in order. It is costing money, but it is closely related to and is being intimately integrated with the social relief program, and it has met with widespread popular approval.

The President's pleasing, simple and genuine personality is well known throughout the length and breadth of the land. When he speaks over the radio and addresses his audience as "my friends," he sincerely means that very thing. The cares and burdens of our complex government had not particularly changed him when I last saw him this year on February 23 at his place at Hyde Park. He has that same happy, carefree smile—the smile that makes friends and warms people to him.
Forestry Benefits from Land Use Planning

By DR. D. S. JEFFERS
Dean of the Idaho School of Forestry, Moscow, Idaho

LAND planning has become in our country the proper thing to do. Planning for land use is not a new procedure in many sections of the nation. The name only is new. We have adopted various means of designating specifically the use of areas of rural land. For many years there have been areas quarantined to prevent spread of animal or plant diseases; game preserves are older than some of the states; herd district areas were early formulated on the open range; more than half a century ago areas of land were set aside for their natural phenomena and reserved for public use; and, of course, all of us are accustomed to the forest areas being established for the growing of timber.

OUR modern use of the word "land planning" refers to something a little more specific. We are interested in this generation in some sort of planning which will give to land its highest use not as a unit set apart and distinct from all other uses in the region, but rather as a use necessary to the economic and social perpetuation of the community as well as the maintenance of the resource value inherent in the land. Our modern efforts are leading quite directly to some type of zoning for land use.

In forestry we are interested to know what effect zoning may have upon the use of land for the growing of timber. There are many factors, some of them evident in most communities, hindering the working out of a long-time forest management plan. These factors root back in the formative periods of the nation, in the development of attitudes and of the pioneer.

The ownership of land and its use, as an economic problem, has carried and still carries with it many interesting and often conflicting social attitudes. The squatter, the homesteader, the real estate agent, the conservationist, the state's rightist, the federalist—to mention the major groups only—each brings to
the solution of the land-use problem his own peculiar approach. From the time of the settlement by the colonists, throughout the formation of the nation to the present national problem of land-use and abuse, those various philosophies have been in conflict in the passage of the many homestead laws and the huge public-land grants. The land policies which developed out of the conflict created the heritage, with its problems, which we face in this generation.

The author while at Iowa State.

UNDER a free-for-all scheme of land-use and the accompanying unsound economic conditions, sustained yield on privately owned land, and public owned land for that matter, has suffered. The demand for land cleared of timber and of possible agricultural value; the constant surging outward of the wave of frontier settlers; in short, the almost insatiable desire for land
by man has kept before us the philosophy that all land is potential agricultural land, and that timber must go. Hence, the public attitude toward land-use has precluded sustained yield of timber land, such a crop as timber being but a passing of the old to make place for the new.

We are prone to glorify the pioneer in any field of human endeavor, and particularly the pioneer who "develops" land. This sentimental desire to perpetuate the individualism of the frontier days is quite apt to cloud the approach to our land problems. The early pioneer went where he chose and asked nothing but the land that he claimed by his labor. Today the counterpart of that early pioneer is the settler on the fringe of land development. He demands and secures more than land. He asks for the roads and the schools and other social services which are recognized as a fundamental part of our social fabric. It appears to be necessary that we redefine the pioneering spirit. We must keep its fine challenge for endeavor, its lure to try unchartered areas, and its willingness to legislate in new fields of human intercourse. At the same time we must abandon the blind allegiance of the pioneer to the philosophy of individualism and nationalism. The new pioneer should be dominantly social in his outlook on life.

Often, the pioneer and his family become an economic and social burden on the community as a whole, because the land does not return a revenue to the public treasury sufficient to offset the expenses incident to the upkeep of the services the new settler receives. The incident may be illustrated in the following:

School Costs: In 1935, e. g., the State of Idaho was burdened with the upkeep of 241 schools in which the pupils in attendance were less than 10 in each school, at a cost of $144 per pupil. Three pupils in one district were in school at a public cost of $335.19 per pupil. There were seven school districts in Idaho with only four pupils each and the cost was $245 per pupil. Of the 214 schools listed, only 39 had as many as 10 pupils. Do not conclude that such a situation is peculiar to Idaho. In Wisconsin (1929) isolated schools were located where the cost was over $300 per pupil. (Wisconsin has a zoning law now.) The classic case in Oregon is that of the school costing $1,800 per year to maintain. It served only one family living on a ranch, advertised for sale at $800. Good business would have dictated that the county buy the farm and save $1,000 the first year.

Road Costs: It is not uncommon for a prospective resident of
"The right of individuals to settle on land and in turn demand of society all of the accustomed social services is challenged."

the itinerant type to deliberately choose cheap and undeveloped land in preference to higher priced land in a developed community which is already served by a road. The new settler boasts that he can get the road to the cheaper land free once he has settled on the land. There are instances of roads of two or more miles in length being maintained exclusively for the individual farmer living at the end of the road. Often, almost the only cash income to the settler is the money which the county pays him to work on the road which serves only his ranch.

A Specific Liability: The individual owner or settler on land in isolated localities is quite frequently a definite fire risk. His indiscriminate clearing of land and burning of brush have brought detrimental results too well known to need elaboration. This same individual may be a potential timber thief. In fact, there is ample evidence that the itinerant settler is prone to cut timber when and where he chooses, and often it is his sole source of money revenue in the winter season.

Quite generally recognized essentially as a game poacher, the attitude of the locality favors him in that the settler in outlying regions is expected to live off the country. He is not wasteful of his game, yet the seasons mean little in his scheme of things.

A Social Burden: Any one of the states west of the 100th meridian has within its border rural relief areas—sore spots, they may be called—which point definitely to the unrestrained operation of what we fondly call the pioneering spirit—rugged individualism—"carving a home out of the untamed wilderness." Society bears the burden.

These factors, which work against any plan of sustained yield,
The individual owner or settler on land in isolated localities is quite frequently a definite fire risk.

can be eliminated, and many others at least partially so, by a controlled and directed use of unsettled or sparsely settled areas. All thinking citizens agree that something is wrong with our land economy. As a result of such instances as those listed above, public expenditures are being scrutinized.

THE evils of uneconomic and unwise taxing units which grow out of unplanned private ownership of land, as well as public land, are evident. That land, which does not produce a sufficient revenue for taxes to offset the costs of government and public services demanded by those residing on the land, or the owners of the land, can be thrown into bold relief. It will be seen that the costs of government and public services for the community, shared by the people on relatively non-productive land, are pyramidèd on other lands. Such an approach to land-use must of necessity, it seems, result in the reorganization of local taxing jurisdictions. We may expect that boundaries will be shifted, jurisdictions empowered to tax will be enlarged, settlements gradually will be centralized, and, in some instances, personal, group and even party ambitions will be thwarted.

Into such a situation comes rural zoning and, to a degree, definitely invades the domain of private ownership of land and limits the owner by a type of regimentation in the use of that land. In the first place, the right of individuals to settle on land and in turn demand of society all of the accustomed social services is challenged.

Secondly, under rural zoning land partakes of the nature of a public utility of much the same status as other public utilities.
Then its control in the interest of the public good follows. Society has come to recognize social values in land. These values are present in land whether in public or private ownership, but thus far the values have not been shown in the balance sheet of the private owner, for no other reason than that they have not been readily sold.

A good example: A value of $500 per acre has been placed upon certain national forest areas for watershed protection in order that irrigated lands in eastern Washington may profit by such a use. A similar estimate of as much as $1,000 per acre has been made for forested lands in the Santa Barbara National Forest of California solely because of watershed values. In order that such values as these and others may be realized, our land economy has, up to the present at least, demanded a relatively large public ownership. It is to be hoped that under rural zoning all of these values may be guarded and made available under a reasonable and planned private ownership.

WITHOUT the expenditure of large sums of money or the immediate transfer of families to new situations at much public expense, a reasoned land-use may be made possible. Of course we can not eliminate, entirely, the submarginal farmer. Such a one is the product of a system beyond the reach of rural zoning. The submarginal farmer still may be existent in localities of 100 percent super-marginal land, but the submarginal farm will not become necessarily a part of the economic structure of our land-use.

Zoning of rural lands is a flexible program. Future uses of land are not determined for all time. Present day uses are established. After the ability of the land to bear the social costs involved in the change to some other use has been assured, legitimate development and expansion in land-use is to be encouraged.

Finally, zoning is definitely set against the resale and resettlement of abandoned lands, the clearing and settlement of new land with questionable social results, and the perpetuation of present unsocial uses. We confidently may expect that timber as a crop on land, to be harvested regularly, will be protected against encroachments from other land-uses, and that society will look upon forest land as zoned for such a use with the same approval that it now gives residential or business zones of the urban centers.
WHENEVER the conditions which hinder long-time management of forest lands are altered, sustained yield will become an economic possibility and a definite social asset under rural zoning. Land better suited to growing timber will be kept for such a use, which is fundamental in any long-time management plan for forested land. Unplanned settlements in timber regions, carrying the customary demands for social services, will not be permitted. Values in timbered land, which up to the present have been possible of realization for the public in the United States, largely under public ownership, will be made operative under private ownership. The heavy costs of small taxing jurisdictions found in school districts, road districts, and county governments, which forest land now bears and which are a large factor in prohibiting sustained yield, will be absent. "Stump ranches" as a by-product of lumbering will become a phantom of the old days. Forested lands, either in private ownership or in public ownership, or combined in one unit under a cooperative agreement for management, can be subjected to a planned scheme of cutting and reforesting, definitely assuring a continuous return for owner and public alike and a measured contribution to the support of communities dependent upon the timbered areas.

Much of the wastage, to which we have become accustomed in the Northwest, will be without justification, for forced liquidation largely will pass. The local governmental costs, which are the chief burdens upon land in forcing liquidation, will be drastically reduced. Mendicant areas of land will be eradicated. Timber as one of the chief crops on land will be recognized and therefore can be husbanded in the public interest under sustained yield, and on privately owned land.

UNDER present economic conditions, the lack of sustained yield on a very large percentage of timber land in the Northwest is a corollary of tax delinquency. Tax delinquency can be eradicated, either by reducing expenses or by shifting the burden. Both ends must be attained if long-time management is to be realized. Timber producing land is not to be relieved of all taxes, but by reducing expenses through zoned development, settlement and use of land, the future is more nearly assured, through a lessening of the tax assessments.

Timber producing areas, regardless of the type of ownership, under rural zoning, will become, naturally, and normally it seems, part of larger units supporting specific groups of people. Such a condition was well described in "Employment and Na-
tional Resources,” by Benton MacKaye (1919). Although approached from the point of view of labor, MacKaye showed how residential areas, truck lands, grazing plots, site land for sawmill, business blocks, schools and for other purposes, and agricultural blocks of land combined with the timber land in just as specific locations, might be united to support, in comfort and contentment, laborers, skilled workmen, craftsmen, business men and professional men, in one community dependent upon and specifically a part of a planned land-use, to which we here apply the term, rural zoning.

The Future: Under the operation of rural zoning we may expect positive results. Rural zoning is not negative. Land better suited for other uses than forest growth and located in satisfactory economic units is definitely dedicated to such uses. Under such a plan agricultural development on areas of sufficient size to justify the investment of time and capital would be encouraged. Likewise, areas for watershed protection, wild life propagation, and recreational resources would be indicated.

Conflicting approaches to a reasonable land-use are mingled in a flexible plan that effects changes in present uses and prohibits unwise future uses. Rural developments, often forced upon society at high cost as a direct result of the small, uneconomic agricultural units, are changed, and land better suited for the growing of timber is kept for that use and assures sustained yield as an economic possibility. Forced liquidation will pass almost entirely from consideration, mendicant areas of land disappear, land and timber partake of the nature of utilities and tax delinquency on such land will become a rare occurrence.

Rural zoning will not be a tool in the hand of the unprincipled to impair or limit private property rights. The operations are all in the public interest. Zoning is a dedication of land to its present highest social and economic use, and such a procedure points assuredly to continuous revenues from managed timber lands, either wholly private or wholly public, or united under one unit plan.
IN SUMMER
There's a fresh wind blowing through the pines
   Of a forest that's far away,
And its coaxing voice in the waving tops
   Is calling to me today;
Calling me from the noisy town,
   With its wearying hurry and work,
To the side of the stream and fern-fringed pool,
   Where the speckled brook trout lurk;

To the depths of a canyon, cool and dim,
   With the shade of a thousand trees,
Where the steady rush of water hums
   A song of content, and the breeze,
Pine-laden, blows softly and whispers to me
   Of sunsets and soft summer rain—
Ah, the dream is so sweet, it is hard to awake
   To the roar of the city again!

◆ ◆ ◆ ◆

Young slipp'ry elm was poplar with a certain clinging vine,
He liked to cedar lovelight in her buckeye's when she'd pine.
Said he, "If I can have a date I know I'll fall fir yew.
   I'll spruce all up and meet you on the beech at half past two.
He elder palm and said to her, "Oh, willow marry me?"
   I'll balsam, yes, and cry for you, if you'll be my Christmas tree.
Her coconut fell on his shoulder as she vowed she'd be his wifey,
Poor slipp'ry learned too late, that his clinging vine was poison ivy.

—Western Florist.
Memorial Union
Are We Too Many?

By GEORGE B. HARTMAN
Assistant Professor of Forestry, Iowa State College

The greatly increased enrollment of students in the forest schools of the United States is viewed with considerable alarm by many, and the question is often heard, "Where will all of these students find employment?" Perhaps it might be well to explore a few of the possibilities for men who have forestry training, particularly those possibilities in the field of the forest industries.

Since the inception of the forestry movement in this country and the beginning of forest education most of the graduates of our forest schools have found employment in a relatively few fields. The study made by Graves and Guise shows that 27.4 percent of such graduates have entered the United States Forest Service, 29.2 percent have found employment in the forest industries and much smaller percentages in various other activities, mostly of a public nature. The study would seem to indicate that the industries were absorbing their share of the forest school graduates.

While no exact figures are available as to the number of such graduates employed in each of the separate forest industries, it is very probable that a breakdown of the 29.2 percent so employed would reveal that most of these men have secured employment with the large logging and milling companies in some capacity, pulp and paper producers or in some branch of wood preservation, while comparatively few have entered the fields of small sawmill operation, the concentration plant and the many other forest industries. This is probably due to the fact that the first-named industries are better known and have offered higher wages and better opportunities for advancement than the latter named ones. However, the small sawmill operation and some of the lesser known industries hold potent possibilities for the trained man and throw out a challenge to the forester if he is interested in the problem of utilization, a problem which for years to come is certain to constitute the major part of forestry practice in this country.
THERE appear to be three chief impediments in the path of men who may choose one of these lesser known industries as a life work. These are, difficulty in securing work in one of these industries due to lack of proper contact, rather disappointing wages to begin with, and an apparent limited opportunity for advancement. But the forester needs to remember that he is on no strange sea alone in these respects. How many men trained in other professions make contacts and enter their chosen field easily as soon as graduated? How many men in other professions have started work at relatively high wages? How many men in other professions have started their life work knowing just what the future held for them or even advanced as fast or as far as they had hoped for? It would seem that the time is ripe for professionally-trained men to enter some of the fields which, to date, have been neglected, and the man who is really interested in utilization will be able to overcome the obstacles standing in his path and forge ahead in these lines of work which so much need his services.

In the entire eastern section of the United States, particularly the South and Southeast, the small mill is replacing the large unit and is certain to be an important factor in the forestry practice of those sections due to the rapidity of timber growth, the fast growing species present and the large areas available on which timber appears to be the best-suited crop. During recent years the small mill has made advancement in quality of product manufactured, but much still remains to be accomplished if proper utilization of timber is realized. Studies have been made by the Forest Service pointing out causes of waste, and a portable band mill has been developed which will decrease materially the waste due to kerf. In spite of these helps there is enormous waste which can be eliminated only through the efforts of the operator.

TREES are often felled leaving high stumps containing considerable high quality material. Careless bucking of logs in the woods with too much trimming allowance has meant much useless waste. At the mills heavy slabbing has been practiced which has resulted in heavy losses, especially where no provisions have been made to utilize such waste. Careless edging and trimming has also been the source of much wood waste.

After the timbers and lumber have been cut, there very often follows a heavy degrade because of a lack of knowledge
of proper methods of seasoning and handling. While this may not result in an actual loss of material, it does mean a loss of income due to lowered quality which in itself reacts unfavorably toward the operation as a whole and in general results in even more wasteful cutting practices in an attempt to recoup such losses of income. An excellent opportunity is afforded the trained man on such an operation, for with a knowledge of proper logging and milling methods and the use of approved seasoning and handling methods the percentage of timber utilized may be greatly increased. The financial return due to a high quality product will also be enhanced. A small saving in material daily and the increased income derived from a better product would compensate for the added wages of a trained man. Certainly this field needs attack by the forest school graduate.

Another field practically uninvaded by the trained man is that of the lumber concentration plant where seasoning and milling of lumber is done preparatory to the sale of the product. Quite often it is impractical, almost impossible, for the small mill operator to season, remanufacture and market the product of his mill because of financial inability, unfavorable location or limited output. A concentration plant, advantageously situated may handle the output of numerous small mills, giving such products the seasoning, handling and milling
care not possible at the point of production. Such plants will become increasingly prominent as the small mills increase in number and importance. Here, again, is an opportunity for the trained man who knows about wood and its care. He may serve as buyer or inspector of the lumber purchased from the small mill, or he may turn his efforts toward securing higher quality products at the concentration plant through better seasoning and re-manufacturing methods. A large part of the success of such a plant depends upon how well the small-mill lumber is processed. The trained man here has an excellent chance both to practice utilization and to bring satisfactory financial returns to the plant. More foresters should enter this work.

PRODUCTION of cooperage stock has for years resulted in a heavy waste of material both in the woods and at the mills. The manufacture of staves, headings and hoops entails considerable waste which is unavoidable yet there is much waste, now common, which might be lessened. Bolts are frequently cut improperly with a consequent loss in equalizing. Considerable carelessness is often encountered at the stave and heading units. This may be eliminated. This field invites the energy and ability of the trained man and, as in other for-
est industries, a small decrease in the percentage of material wasted would pay the wages of such a man.

Each year the requirements of this country for round products such as posts, poles, piling and mine timbers, take the forest growth of large areas in nearly all sections of the country. The waste of material is enormous because of slipshod production methods or a lack of knowledge of the particular needs of the buyers of such products. Orders for these ma-

![The forests supply many industries.](image)

terials are placed, generally, with certain rather-definite specifications as to the size and quality. This, of course, demands that a great deal of care be exercised in selecting the proper trees to fell. Trees are frequently felled which are either too small or do not fulfill the quality requirements, hence are wholly unusable for the purpose intended. If no other use is found for such trees they are permitted, often, to lie in the woods where felled—a total loss. In other instances trees are felled, bucked into the required lengths and otherwise prepared for use but are allowed to remain on the ground in the forest for too long a period. Such a practice results in insect and fungus attack which render the stick unfit for most uses.

"On other occasions, after the materials are produced and hauled from the woods to concentration skidways near railroad sidings, they are left on the ground or are poorly stacked, whereupon they are subject to agents of destruction which may cause complete loss of the material. Skidways along railroad sidings in most forest regions are, all too often, a
cluttered assortment of materials unfit for use, a mute testimonial, in most instances, to ignorance or carelessness. It appears that this field of utilization with opportunity for saving both material and money, should beckon the forest school graduate. Surely he is sorely needed and should be able to exert a powerful influence toward less wasteful methods in the production of round products.

The foregoing are only a few of the lesser-known industrial activities involving forest products which are still undermanned as far as professional foresters are concerned. There are still other industries which fall in the same category and which should be aided materially by the influence of trained men.

The naming of the foregoing possibilities, of course, does not mean that the forest school graduate can enter such fields and overthrow all present practices and methods but merely points out some places where he may combine his technical knowledge with experiences of his own and others acquainted with such industries with the objectives in view which have been indicated. The fact that there is no beaten path to such industries need not be a deterrent factor. Anyone can go where someone else has gone before, but it requires an explorer with vision to seek out positions where service can be rendered. And it may be added, that very often the most may be accomplished and the remuneration may be the largest in fields which have been least explored.
THREE TREES

The poplar is a French tree,
A tall and laughing wench tree,
A slender tree, a tender tree,
That whispers to the rain—
An easy, breezy, flapper tree,
A girl of trees, a pearl of trees,
Beside the shallow Aisne.

The oak is a British tree,
And not at all a skittish tree;
A rough tree, a tough tree,
A knotty tree to bruise;
A dives-his-roots-in-deep tree,
A mighty tree, a blighty tree,
A tree of stubborn thews.

The pine tree is our own tree,
A grown tree, a cone tree,
The tree to face a bitter wind,
The tree for mast and spar—
A mounting tree, a fine tree,
A fragrant turpentine tree,
And resinous with tar.

—Christopher Morley.
Alumni Hall.
The Kawishiwi Experimental Forest

By KENNETH W. SAUER
Assistant Technician, Lake States Forest Experiment Station

AN EXPERIMENTAL forest is an outdoor laboratory where investigations of plant life may be studied under natural conditions. To be most useful it should be typical of the forested area that it represents so that the results obtained may have general application.

The Kawishiwi Experimental Forest, located thirteen miles southeast of Ely, Minn., within the Superior National Forest, is an example of such a laboratory. This 2,800-acre tract of timber was set aside in 1931 from the national forest for use by the Lake States Forest Experiment Station in making silvical investigations and studies of various forest problems.

To visualize and appreciate this forest one should have an understanding of (1) the soils and topography in this region, (2) the timber types present and the trends in forest succession

This "4000 B. C. plow" was found to be an effective implement for tearing up the duff among the stumps and rocks.
in this climate, and (3) the factors interfering with natural tendencies.

The last glacial invasion left, over most of this area, only a thin mantle of soil. Although the soil is a fertile loam, it averages not more than 2 feet in depth and is underlaid by a hard granite-like rock that outcrops in many places. The topography consists of long and narrow rock ledges, and the drainage between them is often poor, resulting in the occurrence of peat swamps. The ledges are usually less than 25 feet high, yet, due to their steep sides, the topography is rough. However, considering the area as a whole, there are no great changes in elevation.

The timber types may be divided into two general classes, swamp and upland. The swamps occupy 28 per cent of the total area of the experimental forest, and slightly over half of the swamp area has been classified as productive. The deeper swamps support only stunted black spruce and tamarack, but the shallower ones produce fine stands of black spruce. The larch sawfly killed most of the tamarack about 1915, and as a result black spruce is the only species of importance in this type. Periodically also the spruce budworm has been a menace to spruce, but its greatest injury has been to balsam. The ages of the spruce stands in the productive swamps range from 40 to 150 years, and the stands are dense, supporting 500 to 750 trees over 4 inches d.b.h. per acre.

Jack pine is the predominant upland species, but it is often found growing in a mixture with aspen, paper birch and black spruce. In a pure stand of 65 to 70-year-old jack pine (the main age-class on the forest) the number of stems over four inches d.b.h. is about 450 per acre. Black spruce trees are as numerous as aspen, but they are smaller in size and contribute less to the timber volume. Scattered balsam fir, white pine, Norway pine and white spruce may also be found.

These mixed types are not, in general, stable associations. The cold climate, heavy brush understory, loam soil and abundant rodent life is unfavorable to the reproduction of most of these species. Without disturbances such as fire, insect attacks, or logging, the intolerant species would eventually disappear. Jack pine and aspen, especially, are poorly adapted to maintaining themselves under the circumstances mentioned. The shade-tolerant balsam fir and spruce are the chief species that are
reproducing under the present stands, and it is believed that they will finally, if allowed to run their natural course without disturbance, form a climax forest.

OFTEN the natural trend of the forest succession is changed by such factors as fire, wind, and insect attacks. During the period 1855-1890 severe fires swept through this region. Because some of the swamps survived the conflagration, the typical swamp species, black spruce and tamarack, were given the opportunity of assisting jack pine, aspen and paper birch in starting a new forest. The few white pine, Norway pine, white spruce, and balsam fir that survived the fires helped in a lesser extent in establishing the present forest.
THE causes of the conflagrations of the last century are not known. There may have been a period of very dry years, or perhaps, due to forest catastrophes such as wind-storms or insect attacks, large volumes of fuel accumulated. A clue to how such conditions may have originated was supplied by a wind-storm which struck the experimental forest in 1932. This storm, which was comparable in intensity with those of the mid-west prairie region, did a tremendous amount of damage. The damage by uprooting and breaking amounted to 17 percent of the total number of trees, and since the losses were mainly in the upper crown classes, the loss in volume was even greater. The windfalls were not distributed uniformly throughout the stand, but were concentrated in patches, with the result that a serious fire hazard was created.

The stand of timber on the experimental forest is mostly suitable for use as pulpwood and mine timbers. Spruce is the most valuable pulpwood species, and jack pine can be used for both purposes. The market for aspen and birch of the quality present is poor. The volume of merchantable timber is shown in the following table:

<table>
<thead>
<tr>
<th>Species</th>
<th>Cords</th>
<th>M. Ft. BM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspen and birch</td>
<td>3782</td>
<td>1639</td>
</tr>
<tr>
<td>Jack pine</td>
<td>2027</td>
<td>3810</td>
</tr>
<tr>
<td>Spruce</td>
<td>4421</td>
<td>......</td>
</tr>
<tr>
<td>Others</td>
<td>296</td>
<td>146</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10,526</strong></td>
<td><strong>5,595</strong></td>
</tr>
</tbody>
</table>

THE common species, jack pine, aspen and spruce, do not attain large size. The range in sizes of the trees in a typical 70-year-old jack pine stand is from 4 to 14 inches d.b.h., and the average size is about 8 inches. It may be surprising to persons accustomed to think of timber in terms of Douglas fir and Ponderosa pine to know that the yields are good. This is because of the short rotations and dense stands.

In the five years since the experimental forest was established the major physical improvements have been completed. They consist of a headquarters development and a road and trail system. The most important improvement work which has been done in the forest is the construction of a road system which makes the tract accessible for fire protection, utilization and demonstration. The fire hazard created by the 1932 wind-storm has necessitated extensive clean-up work. The federal relief programs, especially the CCC, have accelerated the completion of these improvements.
Major emphasis in the investigative work has been placed on the development of cutting methods for spruce and jack pine stands because most of the timber in this tract may be classed as mature. Three series of cutting experiments have been established in mature jack pine stands. In addition, several small plots are being employed to study particular problems such as the effect of soil treatment on germination and early growth. Spruce cutting experiments have been started both in upland and swamp types. The cutting experiments as a whole cover about 70 acres. Thinning and pruning plots round out the picture of the management of well-stocked stands of desirable species.

Many areas of low-value aspen could be converted to other species that will command better stumpage price. Conversion experiments, which include release cutting, under planting, and clear cuttings followed by planting, have been designed to study various phases of this problem.

PLANTING, which is closely allied to conservation work, is also being studied. Several experiments are now in progress concerning age and size of stock, spring planting versus fall planting, choice of species, rabbit control, density of overstory, effect of ground cover and methods of planting. An 18-acre Norway and Scotch pine plantation should caution future foresters to select seed from proper sources for planting. The seed from which the stock was developed was collected from more than 200 widely scattered sources. Some evidences of racial difference have already been observed.

The large increase in forestry activities which was caused by the work relief programs of the past few years has stimulated the interest in forest research work. The experimental forest has benefited from this situation, and in turn the investigations which are being carried on there have been of use to practicing foresters.
By CHARLES M. GENAUX
Associate Professor of Forestry, Iowa State College

IOWA is justifiably proud of the fact that in some respects she is the most favored among the states. The quality of her agricultural soils, for example, is unequalled. In respect, however, to outdoor recreation facilities such as forested camp- and picnic-grounds, she is not to be especially envied.

A striking commentary on this situation is to be found on the road from Des Moines to Ames, in the form of a new and brightly painted sign-board which reads as follows:

RELAX IN WISCONSIN
WHERE FRIENDS AND NATURE MEET
ONE DAY’S DRIVE FROM HERE
INFORMATION SENT ON REQUEST
WISCONSIN DEPARTMENT OF CONSERVATION

To an Iowan, that sign must suggest a comparison of the beauty of Wisconsin’s scenery with that of Iowa; a comparison by which Iowa cannot but suffer.

THIS observation is not intended to be critical of Wisconsin’s policy. But there is another implication, evidenced by the very erection of that sign-board and others like it. It is the implication that Iowa has so little pride in the beauty of her own landscape that she permits the agents of another state to come here and further mar that landscape.

It is cause for shame that we have not yet learned to choose between the unspeakable ugliness of a roadside cluttered with signs of every conceivable size, shape, color, and general unsightliness on the one hand, and the simple but eloquent beauty of an unmarred rural scene on the other.

One does not expect, of course, that this single cry will be
heard very far, nor that it will spell the death of Iowa's billboards. But even if it could, the job would only then be started. For after all, what Iowa should want, if she has any pride, or any abiding interest in her citizens, is not to keep her people in ignorance of the attractions of other states. Rather, she should want to provide, right here at home, the facilities that her people need.

It is to be understood that Iowa is and will always remain essentially an agricultural state. In the light of present knowledge, it is safe to predict that corn will always be the major crop. But to suggest that every available acre be planted to corn, or put into agricultural production of any sort, is to recall the fable of the foolish Midas. It is well to remember the lesson of that fable, lest the stress of economic depression serve to focus attention on utilitarian values, until inspirational and other intangible values are all but forgotten. The highest use is not necessarily the one which pays the greatest monetary return.

There is no denying the fact that present systems of land use have mostly "just happened." In a young country, that was inevitable. It was just as inevitable that mistakes would be made, that some lands which ought never to be cleared would be brought under the plow, and that after a period of cropping, these lands would revert to some form of less intensive use. The depression brought this country to a realization that the wild lands were gone, and that it no longer was possible to move west to new opportunities when the old home farm was cropped out.

Land-use-planning was devised to correct some of the earlier mistakes in land use policy, and planning boards are now functioning throughout most of the country, including Iowa. They are doing a splendid job. But their task is so vast and so complex that considerable time must elapse before completed plans can be put into operation.

Meanwhile, with the federal government straining every resource to bring about reduced production of agricultural commodities, and to encourage the growing of soil-conserving crops, Iowa suffers for need of recreational facilities.

Iowa needs children's playgrounds. Cities, towns, counties, and local rural communities need special playground areas, not necessarily large, but well distributed, so that they will be readily accessible to all juveniles, and well equipped with
swings, wading pools and other ordinary playground equipment. In parts of the state that are so level that no natural coasting hills are readily available, artificial coasting hills should be built. The saving in lives alone would more than justify this expense to protect children from the hazards of modern street and highway traffic.

With all due respect to the city parks of Des Moines, Cedar Rapids, and other cities in the state, it should be evident that city, town, and community parks are all too few, too small, and too poorly financed. Such areas have an important function and do not conflict with any of the other recreational areas mentioned here. They are accessible for outings and picnics for families who do not have the time nor the means to travel to more distant places. Playground equipment may be a necessary part of their accommodations, but city parks cannot, and should never attempt to supplant the playground entirely.

**Requirements** of the tourist need to be considered, and this involves first, a general cleanup and beautification of the roadsides. Tourist traffic and tourist business can be attracted by the right kind of lures. Many tourists carry camping-out equipment with them. If Iowa wishes to play the host to them, she must provide roadside stopping places that are commodious and pleasant.

State parks, of which there are so many fine examples in Iowa now, are needed to care for citizens who can afford to get away for a day or for a week-end. Trees, flowers, camping accommodations, and fish-stocked streams and lakes enhance the drawing power of state parks, and add to their usefulness.

Finally, an adequate state-wide program of recreation must look to the needs of the summer vacationer, the summer-home owner and the resort owner. Natural wooded lands with lakes, streams, and hills or bluffs, are requisite for this kind of use.
Admittedly, Iowa’s opportunities in this particular direction are more limited than those of some other states. The very wealthy, who can afford a summer home in the Northern Rockies, or in any of the exclusive summer resort areas of the nation, will not be attracted in large numbers. But there is good reason to believe that many of moderate means who are now forced to suffer the heat in crowded cities, would eagerly welcome an opportunity to move to such areas within the state.

WHAT is needed, then, is a state-wide planned expansion of recreational facilities and recreational activities. In this expanded program, careful consideration should be given to the correlation of all phases of recreation within the state. Furthermore, each new development should be planned with an eye on the situation in neighboring states, if not in the nation as a whole.

While this is not a proposal to cure our economic ills entirely, it is pertinent to mention some of the benefits, both economic and social, that may be expected to accrue from such a far-seeing program.

The intangible, but none-the-less real, inspirational benefits, the development of pride in the state and her resources, the educational value of supervised play, the cultural significance of frequent and close contact with nature, the stimulus to health and morale, are too obvious to warrant more than passing mention.
THE earliest concept of a forest was that of a royal pleasure and hunting ground. The passage of time has changed this conception, and it is now generally agreed that forests can serve more than a single purpose. Some superlative forest areas are managed for their recreational values alone and some are managed for wood production alone, but the idea that these uses are incompatible on the same area, is outmoded. Indeed, a single forest area may simultaneously be managed for soil conservation, for watershed protection, and for wildlife production, as well as for wood and recreation.

The slogan, “See America First,” applies as well to Iowa as to America, and for the same reason. Providing at home for the recreational needs of its citizens, keeps money within the state that would otherwise flow outside.

Not only that, but recreation brings in surprising amounts of money from outside sources. Hotels, cabin camps, railroads, bus lines, grocers, butchers, garages and sporting goods stores enjoy direct increases in their business, with the result that all business in the affected area is stimulated. Given the opportunity, tourists buy many supplies direct from farmers, thus opening new cash markets.

NUMEROUS studies of revenue from tourist trade have shown the importance of this often maligned institution. The Wisconsin Committee on Land Use and Forestry, in a report published in 1932, concluded, “Wisconsin sells her recreational facilities for $70,000,000 a year with out depleting these resources. In addition, these tourists pay almost $3,000,000 in gasoline taxes.” The same report states that Wisconsin’s annual out-of-state tourist business in 1927 produced a revenue in excess of $140,000,000, and was exceeded only by the motor vehicle, the dairy, and the iron and steel industries, in the order named. In 1931, a depression year, the average daily expenditure per tourist was $1.36. The comparative figure for the period 1923 to 1929, when business was much better, was $2.66.

Increased business such as tourists produce, gives stability to communities whose former sources of income have been depleted. New jobs are created. The tax base is broadened so that individual burdens are lightened. “Success begets success,” and improvement in economic life brings improvement in social and political life. Even if the recreational activities are confined to a limited area of the state, they nevertheless...

gives impetus to more remote industries, by creating new demands for their products.

Any radical departure from established policies necessarily requires a long time for accomplishment. Not everything that needs to be done can be foreseen at present, but certain principles may be set down at the beginning and certain general responsibilities may be delegated.

In Iowa, the State Conservation Commission is the logical agency to coordinate and have broad advisory power over every phase of the development, including rural and municipal parks and playgrounds. A central directive agency is necessary to regulate the amount of development, not only of public but of private recreational facilities as well. The Conservation Commission cannot, of course, be expected to finance nor to technically supervise the actual construction of local facilities. Its technical job lies in the extension of the existing state park system, in the establishment of state forests and the very important work of formulating basic conservation policies. The Commission is the only agency to which we can look for authoritative leadership in the battle of the bill-boards, in controlling the pollution of intra-state waters, and in stocking streams and upland areas with fish and game species. State parks are being extended and definite plans have been made to acquire wild lands for state forests. The improvement of these lands to the point where they will yield the maximum returns is already assured.

It must not be forgotten that the recreation problem is only a part of the land use problem, which also involves the protection of the watersheds of navigable streams and soil conservation. In these aspects, as well as in recreation, the federal government must share responsibility with the state. Preliminary work looking toward the purchase of national forest areas in southeastern Iowa has been under way for some time. The mutual benefits to be expected from bringing the United States Forest Service actively into the solution of the state's land problems cannot be doubted. It is to be hoped that sufficient funds will soon be forthcoming to permit the consummation of these purchases.

In the light of the above suggestions, it is evident that local, state, and national administrative officials must work together to accomplish the desired results.

But the work of these officials in specific instances should
be guided by carefully planned research, which transcends partisan political and local selfish issues. The complexity of the problem, extending over more than 56,000 square miles and involving the integration of many varied soil uses, to build a unified plan toward which all may conscientiously strive, calls for the closest cooperation of everyone concerned.

Of paramount importance is a complete inventory of all existing and potential recreation resources, classified according to their respective adaptabilities for different forms of use. Simple as this seems at first glance, a complication will appear as soon as the study is opened. When one area is found to be equally suitable for two or more forms of use, it will be necessary to classify the uses themselves according to some standard of priority.

Nor can this inventory safely be based upon an appraisal of existing needs alone. To be adequate, plans must look forward as far as reasonable predictions will allow. It is safe to assume that continually increasing efficiency of industrial production will, before long, bring the dream of the 30-hour work week to reality. When that time comes and the final readjustments necessitated by the depression are made, our people will have more leisure time. Health-giving, invigorating outdoor recreation promises the most profitable means of utilizing that surplus time. Undoubtedly, there are many other factors of equal importance that are less readily apparent to any but the trained sociologist. His services are needed.

The economist and the forester have their work laid out in determining, first of all, a satisfactory method of evaluating recreational uses for purposes of comparison with other uses. If, then, on the dollar and cents basis, these experts arrive at a different conclusion than their friend the sociologist, the occasion arises for a delicate weighing of relative values. In the meantime, however, the soil scientist and the agronomist will have been busy learning the chemical and physical characteristics of the soil, and determining on that basis, whether the soil itself, irrespective of scenery and surroundings, is best adapted for grass, legumes, and cereals, or is submarginal for agricultural use. They will determine the extent of the erosion of rich top-soil, and, with the help of the agricultural and hydraulic engineers and the forester, decide upon the most practicable means for preventing further losses and restoring some of the losses that have already occurred.

The economist will compile statistical tables of tax-delin-
quency. With the sociologist, he will prepare charts and graphs showing trends of population, of standards of living, and of agricultural production.

The landscape architect and the state highway department together will plan for roadside beautification. New road locations will be selected on the basis of aesthetic as well as engineering criteria.

"Health-giving, invigorating, outdoor recreation promises the most profitable means of utilizing that surplus time."
ZOLOGISTS, fish and game experts and sanitation engineers, concerned about the possibilities for fish propagation, will suggest the means for disposing of industrial and sewage wastes by some more sensible means than dumping them directly into our streams. The fish and game men will study problems of ecology, of physiology, and of life histories, to the end that better management plans may be adopted.

Any other specialists who can contribute to a more thorough comprehension of whatever elements of the problem their training enables them to understand, should be invited to participate. Land-use planners and federal farm relief officials will surely be consulted.

THE best results from such a far-reaching research program can not be secured without having all parts of the study headed up by a strong central authority. In Iowa, the most logical way to handle the project would seem to be the appointment by the State Conservation Commission of a qualified research worker to serve as a representative of that Commission and to head up the work in the state agricultural experiment station. A competent staff of scientists, long engaged in solving problems of similar nature, is already employed there. There is no lack of interest in the problem, but there is need for one individual who can direct that interest and help to coordinate the findings of all investigators when the project is undertaken.

To summarize briefly, this paper has tried to suggest answers to the following questions:

1. What is the present situation with respect to land use in Iowa?
2. What adjustments in present land-use policies are urgently needed?
3. What good can we expect to derive from a greatly expanded program of forest recreation?
4. How is it proposed to bring about the development of this program?
5. What action should immediately be taken in order to bring to bear on this problem in a common purpose, the united efforts of many individuals with widely divergent views?

Far-reaching social and economic changes are underway. Recreation, almost unknown until a few years ago, promises to become a major human activity wherever its importance is recognized and proper preparations are made. The cornfields are not threatened; they are just being asked to move over a little.
OUT AMONG THE BIG THINGS

Out among the big things—
   The mountains and the plains
An hour ain’t important,
   Nor are the hour’s gains;
The feller in the city
   Is hurried night and day,
But out among the big things
   He learns the calmer way.

Out among the big things—
   The skies that never end—
To lose a day ain’t nothin’,
   The days are there to spend;
So why not give ’em freely,
   Enjoying as we go?
I somehow can’t help thinking
   The good Lord means life so.

Out among the big things—
   The heights that gleam afar—
A feller gets to wonder
   What means each distant star;
He may not get an answer,
   But somehow every night
He feels, among the big things,
   That everything’s all right.

—M. T.
Botany Hall and the Greenhouses.
Modern Systems of Soil Classification

By B. J. FIRKINS
Associate Professor of Soils, Iowa State College

ALTHOUGH it is the chief purpose of the author to outline and discuss the system of classification proposed by the late Dr. C. F. Marbut as adapted to American soils, it is well to briefly review the fundamentals and earlier systems as a background. Many systems which have been proposed are too technical to have much practical value, while others are too simple to have much scientific value. It seems, therefore, that if the following fundamentals are considered, both requirements may be met.

(1) The system should have a reasonably permanent basis, not likely to require sweeping modifications in a short space of time.

(2) The system should be based on fundamental soil characteristics.

(3) The system should express the genetic relationship of different soils to each other.

(4) The system should not neglect the environmental factors which are fundamental in determining the soil characteristics.

(5) The system should be as simple as possible. However, accuracy should not be sacrificed.

The literature reveals the fact that Cato, in the second century B.C., Varro (37 B.C.), and Columella (54 B.C.) had divided soils into general groups according to their capacity to produce certain plants and on the basis of physiographic features and textural differences. In the 18th and 19th Centuries, German and Russian scientists in particular gave much thought to the matter of classifying European soils. Many different bases were established for grouping the soils such as value, character of the parent material, chemical composition, and genesis, with emphasis on the influence of climate in the soil forming processes, particularly moisture and temperature ef-
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fect. In 1892, Dr. Hilgard of California suggested the system, adopted by the U. S. Bureau of Soils, in which he considered both the nature of the parent material and climate.

He first recognized the difference between the influence of weathering agencies under humid and arid conditions and within each region included: residual, cumulose, glacial, aelolian, sedimentary, and colluvial groups. The geological groups are recognized by the U. S. Bureau of Soils systems and classification.

In the early 20th Century, E. Rahmann, Glinka, Lang & Meyer, Vilensky, and Neustreuv developed systems in which the climatic factors were particularly stressed. The chief objection to such systems was that, although they indicated the influence of the climatic factors on the soil characteristics, they did not distinguish between soil groups. In 1929, Gedrioz suggested a system based on the absorbing complex, grouping the soils into two classes: (1) Base saturated (chernosem and alkaline soils), and (2) base saturated (podsolic and lateritic soils). Again, in 1930, Stebutt proposed a scheme based on characteristics of pedogenic processes recognizing undeveloped and developed soil formations. These are not sufficiently detailed to be regarded as true classifications.

Dr. MARBUT, in explaining his scheme, maintained that a classification of bodies consists of their arrangement in some kind of order and is not concerned with their creation; it assumes the fact of creation. The creative function must have been performed before classification can take place. One is creative and constructive, the other mechanical. Recent writings reveal the fact that Marbut's scheme is generally used throughout English speaking countries and the Russian and other systems are being closely correlated with it.

The accompanying map shows the distribution of the major soil groups in the United States which fall under the several categories in Marbut's system. A schematic arrangement of the seven categories recognized in his complete system appears on the opposite page.

**Pedalferic Groups**

The Pedalfers are non-lime accumulating soils. Through the processes of physical and chemical weathering, there has been an accumulation of aluminum (Al) and iron (Fe), and it will readily be observed that this combination of symbols has given rise to the name. The soil formations in this great
group occur west of a line from northwestern Minnesota to Corpus Christi, Texas.

There are five major subgroups in this pedalferic group, as follows:

(a) Podzols
(b) Gray-brown forest
(c) Red and yellow earths
(d) Ferruginous laterites
(e) Prairyerths

The first four form a series of east and west belts from north to south in the eastern part of the major pedalferic zone, while the prairyerths comprise a north-south belt adjacent to the western boundary. The boundaries are based on mature profile development for each subgroup.

Podzols: The major areas of the podzolic soils in North America are to be found in southern Canada, but several smaller areas are indicated in the humid northern part of the United States. They are characterized by:

(1) A surface layer (1"-6") of raw humis or vegetable matter.
(2) An acid gray to nearly white silicious, highly leached upper mineral horizon.
(3) A darker brown or coffee brown sub-soil with a relatively higher organic content than the characteristic leached layer.

The surface horizons have a platy or single grained structure while that of the sub or “B” horizon is angular.

*Gray-brown forest:* These soils, where undisturbed, usually have an upper leaf litter layer (1”-3”) and a layer of leaf mould (1”-2”) overlying the true soil. The two chief characteristics of this subgroup are as follows:

1. They are non-lime accumulating and have “B” horizons relatively high in iron and aluminum.
2. They are forest soils, with the natural vegetation consisting of associations of deciduous trees such as maple, birch, beech, oak, and yellow poplar.

In the eastern belt they have been formed under 30”-45” of rainfall and with the exception of the prairyerths, are less acid than any of other of the pedalferic group.

*Red and yellow earths:* The yellow soils are developed in the south Atlantic and gulf coastal plains and the Appalachian plateau. The red soils occur chiefly in the Piedmont and the Tennessee section of the valley and ridge province. The two together are recognized as transition soils in the Mississippi upland loess region and the more rolling areas of the coastal plains. Compared to the gray-brown forest soils, the red and yellow soils are more thoroughly bleached, their minerals are more completely decomposed, and their structural characteristics are inferior. Consequently, they are rated as poorer soils from a fertility standpoint. The names are derived from the fact that the “B” horizons of redderths are red and for the yellowerths are yellow.

*Ferruginous laterites:* These red soils are not extensively developed in the United States, the principal areas being found in Georgia and Florida. They are characterized by their content of inundated bodies of impure iron oxide in the form of pebbles, seams, ledges and surface coatings or crusts about the granules or aggregates. As a rule such soils are moderately to strongly acid and are thoroughly leached. In spite of these characteristics, however, they are classed as strongly desirable soils under proper management.

*Prairyerths:* The chief relationship of this sub-group to the pedalfers lies in the fact that they are non-lime accumulating.
Unlike the other members they have been developed under grass cover and have acquired dark-colored “A” horizons, rich in organic matter. The “B” horizons are brownish to yellow but are not much heavier textured, are not so extensively leached, and are fairly high in soluble salts. They have a pro-

nounced granular structure and although low in lime are not excessively acid in reaction.

The black, waxy, Houston-clay soils of Texas are similar in some respects to the normal prairyerths, but would be classed as immature soils and designated as “Rendzinas.” They have a higher natural lime content than the parent material.

PEDOCALIC GROUPS

The pedocals derive their name from the fact that they are lime (calcium) accumulating. As shown on the map there are four major subgroups of soils extending in north-south belts and two areas of undifferentiated soils bordering the area of gray desert soils. The subgroups are:
(1) Blackerths—chernozems
(2) Chestnuterths—arid brown soils
(3) Brownerths—arid brown soils
(4) Grayerths—gray desert

**Blackerths—chernozems:** This group has many features in common with prairyerths, but may be differentiated by the following characteristics:
(a) Blacker color
(b) More perfect granulation
(c) Higher content of mineral matter
(d) Neutral to alkaline reaction.

The prairyerths are, as a rule, acid in reaction, as the result of more extensive leaching action. The chernozems were formed under insufficient moisture and the carbonates have accumulated. In some cases, they have accumulated in excessive amounts and have given rise to alkali or saline soils.

**Chestnuterths:** These soils formed in the central part of the belt vary from dark brown in the north to dark reddish brown in the south and the characteristic subsoils are brown to reddish brown. They are lighter than the chernozems, due to the westward decrease in precipitation and density of vegetable covering. The zone of lime accumulation is shallower and the upper horizons have not been leached as much. Their structure is not as granular as the chernozems, being more columnar or cloddy, but the aggregates break down easily under cultivation.

**Brownerths:** These are the highest colored of all the great plains soils and the carbonate zone is the shallowest. The light brown colors have been developed under grass cover, but is less dense than in the other belts. The surface soils are structureless or loosely deflocculated, and the “B” horizons show columnar breakage. They are wholly unleached with the low precipitation, and only a small part, if any, of the soluble salts have been removed.

**Grayerths:** These soils vary in color from brownish-gray in the north to reddish tinted soils in the southern part of the region. The typical surface horizons forms a thin “desert-crust” or “desert pavement” with a substructure of loose, porous material called “desert mulch.” This zone is underlain by a zone of lime accumulation which may often form a firmly cemented hardpan. The organic content is very low and there has been little or no leaching of mineral matter.
The broken lines extending from east to west as indicated on the map, mark off the north-temperate, mid-latitude, and south-temperate zones. The soils are somewhat darker colored in the northern zones and become increasingly lighter colored as one goes south. Temperature is a factor in addition to vegetation in influencing the soil characteristics. Later studies may result in further separations in the regions of undifferentiated soils.
The Great Smokies.
A Forester in the National Park Service

By W. H. HORNING
Professor of Forestry, Iowa State College, on leave of absence

WHEN a very unexpected opportunity to join the National Park Service presented itself I was at first inclined to reject it with scant consideration but the lure of the wilderness was strong. Recurring visions of high mountains, verdant forests and camping out under the stars held an irresistible appeal. Also, an unusually annoying lot of final exam papers were still cluttering up my desk; there was a very large question mark in my mind as to why I had ever undertaken to become a college professor; and it seemed possible that the students were puzzled over the same question. Finally, being of a very sympathetic nature and wishing to give the students a break, I secured a leave of absence from the college and set out to get a fresh point of view and material for some new yarns to spin at the Fall Campfire.

No doubt an exposition giving the low-down of some of the inner workings of a governmental organization such as the National Park Service would be of interest to undergraduate foresters who are faced with the problem of finding employment in a field for which their college training has fitted them. Unfortunately a year is too short a time in which to become sufficiently acquainted with the workings of such a far flung organization to permit the formulation of wholly reliable opinions, so this discussion will have to be limited to certain features which have come within my experience.

THE function of a forester in the national parks is normally restricted very largely to protection activities. This may include, not only protection from fire, insects and disease, but also, protection from unwise or excessive use of certain areas by man. The forester also finds himself engaged in type mapping and sample plot studies to determine what changes are occurring in the forest or other vegetative cover types. In
some of the more recently created parks in the eastern states there are large areas where the forest conditions are very abnormal as a result of past misuse, and it is desired to restore natural conditions as rapidly as possible. In some cases this involves the establishment of nurseries for the growing of planting stock of desired trees and plants for use in various kinds of plantings. This, too, is in the natural field of the forester.

My own work with the Park Service was supposed to be that of fire control in national parks east of the Mississippi River. It was thought that in order to function properly I would have to visit the various park areas and become acquainted with the conditions which I would be expected to deal with. The first area visited was the Great Smoky Mountains National Park, because of its size and the importance of its fire control problems.

THE Great Smokies are located in the states of North Carolina and Tennessee. This is one of the most beautiful mountain regions of the east and has a remarkably rich flora and fauna and for these reasons is especially interesting to the forester, the botanist, the biologist, and the landscape architect. Several weeks were spent there in making a detailed study of the protection organization, equipment and plans, all of which were already under rapid development. Under the stimulus of Emergency Conservation Work and the abundance of CCC labor, many interesting developments were being pushed to completion which will provide that park with quite an ideal protection against fire. Seven steel lookout towers were already constructed and in operation for fire detection. Several more, needed to complete the system, were under consideration, and I had a chance to use some of the well known visibility mapping in determining the proper locations and heights for these towers. This was complicated by the fact that landscape architects consider lookout towers a blot on the landscape. This was a new point of view to me but had to be accepted. Therefore, the number of towers was to be limited as much as possible and their heights held to the minimum consistent with efficient service. All necessary towers are now in place and equipped with modern devices for fire location and reporting. Osborne range finders are in use for fire location, and short wave radio equipment is used for communication.
THE radio system is quite complete and being improved from time to time as more efficient units are developed. At present the park headquarters have power equipment which is constantly in operation so that the smaller portable and semi-portable sets, carried by patrolmen, in their automobiles or by the lookout men on towers, may call headquarters at any time. Regular schedules are maintained so that the patrolmen and lookouts can be called by the headquarters operators. These schedules vary with fire weather conditions, twenty minute intervals being used in very hazardous weather and much longer intervals for less dangerous conditions.

Interesting experimental work is being conducted in the hope of improving and perfecting the radio system. The semi-portable sets located on lookout towers are operated by dry batteries. As the batteries gradually lose their power, over a period of weeks, the sets become less efficient, and, finally, the batteries must be replaced. This sometimes involves inadequate communication and considerable expense. In the hope of overcoming such objections, storage batteries, with wind
motor charging equipment, are being tried and seem to offer hope of success. Another type of experiment is with very small, light-weight, portable sets of ultra high-frequency characteristics. They are of interest for the use of patrolmen because of their light weight and for communication between towers where unobstructed air line conditions exist. Such sets are more efficient and less affected by static than most other equipment. It is possible that they may come into general use.

FIRE control in this particular park and many others is being rapidly put on a very efficient basis. Extinction crews fully equipped with modern fire tools are placed at practically every fire within a very short time after the fire is discovered. The result is that fire damage is being held to almost trifling amounts. This goes to show that the fire problem is one which can be whipped if adequate funds are made available.

During the Great Smokies study my photographic hobby was freely indulged. As a result I had many good photos to use in illustrating the required written report, and good photos are invaluable for such purposes. They aid very materially in justifying and gaining acceptance for perfectly good
recommendations which otherwise may be refused, because words fail to convey a complete picture.

AFTER having my Great Smokies report reviewed, criticized, and accepted by various interested branch chiefs, and most of my recommendations carried out, it seemed that I was well started on the road to recognition as fire control expert for the east. But, changes have a fashion of breaking out very unexpectedly in the Washington environment. I soon found myself on a special assignment, quite foreign to fire control work, and in many respects even more interesting. As a result of my having talked too much at the right time it became known that I had some knowledge of the Mount Olympus area in Washington state. Consequently I found myself assigned to the job of making a detailed study of the proposed Mount Olympus National Park. This proposal, if carried out, would involve the transfer of a large area of wilderness from Forest Service control to that of the Park Service. The change would also preclude any possibility of logging the timber on that area. The logging interests of the region who have hopes of being permitted to log some of the timber if it remains under Forest Service control are supporting the Forest Service vigorously
in opposing the park plan. It, therefore, became my job to study and report upon the probable effect that withdrawal of this forest from commercial exploitation would have upon the sustained yield plans of the Forest Service and the affiliated economic interests.

THIS proved to be a much larger task than was at first anticipated, but it was an extremely interesting one. The scene of the necessary field study was in a region of superb beauty, and during the course of the summer I enjoyed many miles of travel either by horse or on foot, covering practically all existing trails of the Olympics. Some of the longer trips were made in the company of others of the Park Service, interested in other phases of the problem. Several thousand feet of motion pictures were taken on these trips, and again I indulged my photographic hobby to good advantage. Altogether I had such a bully good time that it scarcely seemed like work. At various times, as I crossed trails traversed during the preceding season in company with the gang from Iowa State, there were pleasant recollections of interesting and enjoyable incidents of that other season when the old rallying cry of "Tally Ho!" reechoed in many a wild canyon.

VOLUMINOUS reports, memoranda and maps have been prepared as a result of the summer's explorations, and even yet that same problem continues to pop up for further consideration. Hearings before committees in Congress are in prospect and hold a promise of further interesting developments.

As one hears over the radio, "the wheel goes 'round and 'round and where she stops, nobody knows." My connection with the Mount Olympus project came largely by chance and seems now to have turned me from the field of fire control and into work of quite a different sort. I now find myself being transferred from the Branch of Forestry to the Branch of Planning with the prospect of having special investigations as a steady diet. For the approaching summer this will probably include a trip to California—and where else, nobody knows.

The preceding recital does not seem to describe the work of a forester, and yet the forestry training, even logging, forest products and timber preservation, is of frequent use in judging the merits of park projects. To any student, considering the National Park Service as a career, I would say that a general course in forestry forms one of the best possible preparations. Special work or electives taken in ecology, wild
life management, landscape design and geology will prove valuable to the forester who enters this field.

Many foresters have entered the park service in recent years and are succeeding both in technical and administrative work. Some have entered as rangers, some as park naturalists and some as technicians connected with CCC work. In most cases where real ability has been demonstrated, through the performance of good work, it is rewarded by suitable advancements. Foresters now hold various sorts of positions such as ranger, chief ranger, park naturalist, park superintendent and branch chief. The organization has grown and expanded to such an extent in recent years that it is now being reorganized on a regional basis. It is possible that a man of forestry training may head one of these regions; and each regional office will probably have at least one assistant regional officer with forestry training. This development indicates that the Park Service will be comparable to the Forest Service in offering opportunities for the employment of men possessing good sound forestry training such as is offered at Iowa State College.
The Victory Bell.
Game Management in a National Forest

By MARSHALL THAYER, '36

"WILL you accept an appointment as Assistant Game Conservationist on the White Mountain National Forest? The salary is very good."

Naturally, I landed in Laconia, New Hampshire, on schedule, feeling somewhat overexposed and spottedly sensitive after the 1500 mile motorcycle journey, and, incidentally, a bit excited and worried about my new job.

“Oh yes, we’ve been expecting you. Don’t know what you’re going to do or how we’re going to pay you. Can’t understand it—our appropriation’s cut, employees furloughed, and they keep hiring new men!"

I felt like apologizing for having accepted the job. But after completing a week’s inspection trip and writing a report on wildlife conditions, I was thoroughly enthused about the work, and in my eagerness to get something done, I must have goaded a somewhat dormant feeling of interest among my associates, for their willing cooperation in wildlife problems convinced me that the realization of practical game management on a National Forest was far from being a singular or hopeless task.

IT HAS been only in recent years that we have come to the realization that our forests must be managed on the basis of multiple use. These uses have been slowly developing from the days when the protection, growth and management of the timber resource was practically the only objective of the Forest Service. Since then, we have seen the successful administration of grazing, soil conservation and recreation. Now we are rapidly progressing toward the management of our wildlife.

The forester of today must specialize. But even in his specialization he must clearly conceive of the forest as an inter-related community of living organisms. Each resource must be managed in harmony to bring the greatest good to the greatest number of people in that particular locality.
The correlation of forestry and wildlife management has recently become a much discussed subject. It has been conceded, by most of those who have actually made a study of it, that the problem of correlating the two into an economically feasible program is entirely possible; in fact, only slight modifications of present forestry practices, and similar modification in the viewpoint of and practices advocated by biologists and conservationists, will be needed.

Many of our forests, especially those in the west, now have wildlife management plans of some sort. It must be realized, however, that the plans made in this early stage of development are only theoretically sound. It will take years of practical application, study and research, to even approach a plan that is applicable to practical sustained yield.

It would seem then, that our immediate problems will take the form of research. And so it is research that is the primary duty of the wildlife technician of today. However, we must not let this phase of the work over-shadow practical application of what management we already know is feasible and immediately necessary.
A TYPICAL sequence of activities initiated by a game conservationist in a National forest might be as follows:

1. Inspection trip to become familiar with the flora and fauna in general.
2. Selections of an area for management studies. (Later, other areas can be selected and the results of studies on each incorporated in a final management plan for the whole forest.)
3. Detailed survey of the management area to determine the location and size of the food and cover types, based on previously gained knowledge of food and cover habits of the most important game species.
4. Wildlife census by game drives or sample methods to determine populations.
5. Determination of species to favor under management.
6. Research methods in determining food and cover preferences of each particular species in that particular locality by use of stomach and feces analysis, and food utilization studies.
7. Determination of maximum carrying capacity for each species and type by measurement of available food, correlated with its respective nutritive value.
8. Studies of the predator and rodent problems, and the compatibility of species.
9. Studies in the conflicts and correlation of wildlife with grazing, farming, silvicultural practices, etc.
10. Collection of biological data concerning life cycles of each economically important species.
11. Studies of disease and their control.
12. Regulation of fish and game laws to protect or remove portions of each wildlife population in attempting to arrive at the computed carrying capacity and still maintain a favorable biological balance.
13. Suggestions and recommendations for the modification of silvicultural methods and cutting allocations to sustain suitable food and cover areas.

ALL these things, and many more, must be incorporated in a management plan. It is not hard to realize, therefore, especially in the light of our present meager knowledge of wildlife cycles and behavior under controlled conditions, that the problems to overcome in reaching a practical sustained yield are many and complex. Still, it can be done, and it is logical to believe that the Forest Service can best do it.
Central in the distance.
Professor and Mrs. MacDonald occasionally find time for a quiet evening at home.
THE 1936 AMES FORESTER STAFF

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THE FACULTY

Professor G. B. MacDonald
Professor R. B. Thomson
Professor C. M. Genaux
Professor J. A. Larsen
Professor G. B. Hartman
Professor A. L. McComb
Hans Milius, Teaching Fellow
EARLY in October, 1935, the Forestry Department was happily surprised by the addition of a new faculty member in the person of Prof. A. L. McComb.

Professor McComb is still "Andy" to both faculty and students except for the occasional freshman who is awestruck by the dignity of his position. This year he taught freshman forestry, wood technology, and forest planting. His was a very successful first year as an instructor. The Juniors report they work hard for him, but learn a lot and like it—no greater tribute could be paid a teacher.

Professor McComb graduated from high school in Vandergrift, Pa., in 1926, and after working as an assistant foreman in a steel mill for one year, enrolled in the Pennsylvania State College Forestry Department at State College, Pa. He received his B. S. degree in January, 1932, and was retained at the college as an assistant in research until the following fall, when he entered Iowa State College as a graduate student. Majoring in general forestry with one minor in plant physiology, and a second minor in ecology, he received his M. S. in 1933.

Immediately after graduating an E.C.W. assignment took him to the Allegheny Forest Experiment Station, where his reputation had previously been established. After passing the Junior Forester exam and receiving an appointment in March, 1934, he released himself to become director of the Erosion Control Nursery at Ames, the next year resigning to accept his present position with the college.

Shortly before school opened last fall Andy married an Iowa girl, Miss Cleo Kirkpatrick. And today he rather emphatically stated his only objection to Iowa was the flat topography. We are not certain, however, that this statement was to bear any significance.

With our congratulations, we extend our sincere wishes for continued success, Andy.
PROF. C. M. GENAUX came to us from the University of Idaho in June, 1935, and was first introduced at the forestry summer camp. Blessed with a pleasing personality, a ready smile, an undeniable interest in forestry, and more than an occasional outbreak of witty humor, he at once won the friendship of the entire department.

After graduating at the head of his high school class at Shingletown, Pennsylvania, in 1920, Professor Genaux entered the Pennsylvania State Forest School at Mont Alto, where he received his B. S. degree in 1924. Being an excellent speaker, he was awarded honors in the Rothrock Oration while at Mont Alto.

From the East he jumped to Washington State College to teach in the Forestry Department from 1926 to 1928. Following this he was an associate professor of forestry at Utah State Agricultural College and in 1931 went to the Southern Branch of the University of Idaho at Pocatello as professor of forestry. In 1935, when Iowa State was attempting to attach him to the faculty here, he was head of the Department of Forestry, Southern Branch, University of Idaho.

Professor Genaux states that his primary interest lies in silviculture and dendrology. He is enthusiastically interested in all activities of the department, including the club, the rifle team, and the Ames Forester.

During the winter quarter Professor Genaux, as curator of seminar, required everyone to pass a final examination before receiving credit in the course. His success with this plan is proof of the favor with which students regard him.

Professor Genaux is married and has two fine children, Charles, age 9, and Eleanor Ann, age 8.
Iowa State College forestry student enrollment chart for the period from 1904 to 1936.
Student Enrollment Reduced

The forestry student enrollment at Iowa State College will be reduced in the fall of 1936, according to the official report, by limiting enrollment in the sophomore class to 75. It is probable that the same practice will continue in successive years. The reduction will be effected by limiting the sophomore class enrollment rather than by rejecting prospective freshmen for the reason that a sophomore student has had one year in which to express his ability and adapt himself to forestry, whereas prospective freshmen could not be fairly judged.

Men in the field are warned to look alive; a high class product is coming through the forestry department at Iowa State College.

New Faculty Members for the Fall of 1936

A new instructor will be added to the forestry faculty in the fall of 1936. This addition is necessitated by the large enrollment and because of the specialization planned for the new 5-year forestry courses.

In addition, two research fellows and two teaching fellows will be added to the staff next fall. These fellowships are open to any forestry school graduate holding a bachelor of science degree. Beside research and teaching duties, they permit of fifteen hours college work leading to the degree of master of science in forestry. No selections for the positions have been made to date.

Summer Camp—1936

Woods Springs, 28 miles from Flagstaff, on the Coconino Plateau, Arizona, has been selected as the setting for the 1936 forestry summer camp. An unused CCC camp already made available gives promise of making this the "deluxe" of summer camps.

The region about Flagstaff offers unusual opportunities for the study of grazing, forest recreation, timber sales, logging operations, fire protection, and game management. The Southwest Forest and Range Experiment Station and the Lowell Observatory are near at hand. Many points of interest close by, such as cliff dwellings, prehistoric ruins, the petrified forest, and the Grand Canyon of the Colorado, will, no doubt, be visited during the summer.

Faculty members attending the camp are: Prof. G. B. Hartman, Prof. J. A. Larsen, Prof. A. L. McComb, and Prof. C. M. Genaux.
A Revised Forestry Curriculum  
And the Five-Year Course

The Iowa State College Catalog for 1936-1937 contains several pages devoted to the new forestry curriculum, which includes four specialized 5-year courses leading to a degree which will probably be termed "Forester Degree," besides the regular 4-year course with the final objective being a bachelor of science degree. Many of the students welcome an opportunity to specialize. Others object to more than four years college training and for these the old order is retained.

However, the official report is that the 4-year course will eventually become a thing of the past. This is true for two reasons. In the first place, specialization in the forestry field is continually becoming more intensified and is already demanding training beyond the 4-year course. And secondly, the supply of foresters is rapidly increasing and a better quality product will be required in the future. For the benefit of those to whom catalogs will not be available, a plan of each of the courses offered is included here.

The first 2 years (freshman and sophomore years) are the same for all classes. They are as follows:

**FRESHMAN YEAR**

<table>
<thead>
<tr>
<th>FALL</th>
<th>WINTER</th>
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<td><strong>Total</strong></td>
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The following courses of study are carried on in the summer camp for forestry students. The camp curriculum occupies ten weeks during the summer between the Freshman and Sophomore years. Summer camp is prerequisite for entrance to the Junior year.

- Silviculture 5
- Lumbering 4
- Natl. For. Operations 4
- Forest Mensuration 5

**Total** 18
### SOPHOMORE YEAR

<table>
<thead>
<tr>
<th>Fall</th>
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<tbody>
<tr>
<td>Lumbering</td>
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<td>Forest Mensuration</td>
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<td>18</td>
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</table>

At the end of the sophomore year the student must decide upon the course he will pursue; he may elect to follow the 4-year course in general forest management or in general lumber marketing, or he may choose to specialize in one of the following 5-year courses:

1. Forestry and conservation
2. Forestry and economics
3. Forestry and game management
4. Range management

The plan for the junior and senior years of the 4-year course is as follows:

#### JUNIOR YEAR

<table>
<thead>
<tr>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
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<tbody>
<tr>
<td>General Ecology</td>
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<td>Forest Finance</td>
</tr>
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<td>Forest Soils</td>
<td>Plant Physiology</td>
<td>Chem. For. Prods.</td>
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<tr>
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<td>Fishes</td>
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#### SENIOR YEAR

**FOREST MANAGEMENT GROUP**

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<thead>
<tr>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
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<tbody>
<tr>
<td>Forest Management</td>
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<td>Gen. Forest Economics</td>
</tr>
<tr>
<td>Silviculture</td>
<td>History and Policy</td>
<td>Rec. &amp; Reg. Planning</td>
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<td>Plant Pathology</td>
<td>General Bacteriology</td>
</tr>
<tr>
<td>Forest Insects</td>
<td>Electives</td>
<td>Feature Articles</td>
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**LUMBER MARKETING GROUP**

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<td>Lumber Markets</td>
<td>Extempore Speaking</td>
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In the plan for each of the 5-year courses which follow, it will be noted that the subjects peculiar to the particular group are marked with an asterisk.

1. **FORESTRY AND CONSERVATION GROUP**

#### JUNIOR YEAR

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### 1. THE 1936 AMES FORESTER

#### SENIOR YEAR

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#### POST SENIOR YEAR

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<tr>
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### 2. FORESTRY AND ECONOMICS GROUP

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### 3. FORESTRY AND GAME MANAGEMENT GROUP

#### JUNIOR YEAR

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#### POST SENIOR YEAR

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### 3. FORESTRY AND GAME MANAGEMENT GROUP

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### POST SENIOR YEAR

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No degree is to be awarded at the end of the senior year, although it is expected that the college will present a certificate of some sort recognizing the completion of 4 years' work. It is considered that the last 3 years are spent on specialized work simply because 2 years is not sufficient time to thoroughly cover the ground.

A student completing the post senior year of one of the 5-year courses will be eligible for enrollment in the graduate college.

**Our Forester**

MISS CLADINE HALLIWELL has managed to break the tradition of a number of years and we find a girl forester, a forestet, if you please, in our midst. Margaret Stoughton Abell, '29, apparently succeeded in upsetting the theory that Forestry was entirely a man's game. Miss Halliwell is a transfer student from Wisconsin and is specializing in game management. She is a crack shot with a rifle, an enthusiastic Forestry Club member, and we don’t call her "sissy." Yet, with all due respect, Mrs. Abell, we feel sorry for the boys in camp this summer. Don't you?
On learning that he was to become a professor he grew a beard to play the part.

Professor G. B. MacDonald—1910

STUDENTS
GLENN BALL—"Ball"
Columbus Junction, Iowa.
Camp:
Olympic National Forest, Washington, '34
Experience:
Iowa Forest and Wasteland Survey, '34, '35
Iowa State Student, 2, 3.
Ames Forester, Associate Editor, 3, 4.
Forestry Club, 1, 2, 4—Sec. and Treas., 3.
Iowa Agriculturist, 2.
Veishea open-house, 2, 3.
Lambda Chi Alpha.

A. BAUER BISHOP—"Bish"
Tomahawk, Wisconsin.
Camp:
Olympic National Forest, Washington, '34
Experience:
Small logging operation, Tomahawk, Wis., '33
C. C. McLaren Logging Co., Tomahawk, Wis., '35
Tomahawk Kraft Paper Co., Tomahawk, Wis., '35
Senior Intramural Athletic Manager '35, '36.
Interfraternity Athletic Council, Sec. and Treas., '34, '35.
Forestry Club.
Tau Kappa Epsilon.
Alpha Phi Omega.
Alpha Zeta

KENNETH A. BRINKMAN—"Ken"
Des Moines, Iowa
Camp:
Olympic National Forest, Washington, '34
Experience:
Heard Landscape Service, Des Moines, Iowa
Iowa Timber and Wasteland Survey, '34
Soil Conservation Nursery, '36
Ames Forester, advertising manager, 4
Glee Club
College Quartet
Alpha Zeta
Gamma Sigma Delta

KENNETH C. COMPTON—"Red"
St. Louis, Missouri.
Camp:
Lake Wenatchee, Washington, '33
Experience:
Iowa Forest and Wasteland Survey, '34
Ames Forester, Circulation Manager, 4.
Foresters’ Rifle Team, 3, 4.
Forestry Club.
Veishea
Band, 3.
Orchestra, 3
Alpha Tau Omega
Alpha Zeta
Phi Kappa Phi
Gamma Sigma Delta
MANFORD A. ELLERHOFF—“Pa”
West Burlington, Iowa.

Camp:
Little Bitterroot Lake, Kalispel, Montana, ’30

Experience:
Shasta National Forest, trail construction, California, ’31
Iowa Forest and Wasteland Survey, ’34, ’35
Fristoe Purchase Unit, Freemont, Missouri, ’35

Veishea
Alpha Phi Omega.
Ag Council.
Pi Kappa Alpha.

RUSSEL E. GETTY—“Bear Tracks”
Waterloo, Iowa

Camp:
Deschutes National Forest, Bend, Oregon, ’31

Experience:
Iowa State Board of Conservation, Timber Survey, ’32
Indian E. C. W. Project Manager, U. S. Indian Service, ’33, ’34, ’35
Ames Forester, Ass’t editor, 3, Editor, 4.
Forestry Club, 1, 2, 3, 4.
Forestry Rifle Club, Capt. and Coach 3, Coach, 4.
R. O. T. C. Rifle Team, 1, 2, 3, 4.
R. O. T. C. Pistol Team, 1, 2, 3, 4.
Scabbard and Blade.
Alpha Zeta.
Phi Kappa Phi.
Gamma Sigma Delta.
Pack essay, 1, 2, 3

LEWIS K. FERGUSON—“Two-chain”
Algona, Iowa

Camp:
Deschutes National Forest, Bend Oregon, ’31

Experience:
Cherokee National Forest, Georgia, ’34
Land Acquisition, S. F. S., Alabama and North Carolina, ’35
Forestry Club, 1, 2, 3, 4
Ames Forester 3, advertising manager 4
Veishea, 1, 2, 3, 4

RALPH H. FELKER—“Felk”
Vinton, Iowa.

Camp:
Deschutes National Forest, Bend, Oregon, ’35
Forestry Club, 1, 2, 3, 4.
Forestry rifle club, 3, 4.
Veishea Open house, 2, 3.
Adelante.
MARTIN F. GRAU—“Axel, Jr.”
St. Charles, Missouri.
Camp:
Lake Wenatchee, Washington, ‘33
Forestry Club, 1, 2, 3, president, 4.
Ames Forester, business manager, 4.
Veishea float, 3.
Forestry rifle club, 4.

E. WINN HEYER—“Scoop”
Sumner, Iowa.
Camp:
Olympic National Forest, Washington, ‘34
Experience:
W. H. Heyer Sons Lumber Co., Sumner, Iowa
Sigma Alpha Epsilon, president, 4.
Sigma Delta Chi, president, 4.
Alpha Zeta, Chronicler, 4.
Cardinal Key, secretary, 4.
Student Publication Board, president, 4.
Intrafraternity Council, 4.
Iowa State Student Publication Board, 3, 4.
Ag Freshman Scholarship Prize.
Iowa State Student, 1, 2, 3, 4.
Green Gander, 2, 3, 4.
Ames Forester, assistant editor, 3, 4.
Iowa Agriculturist, 3.
Veishea Publicity, 2, 3, 4.
Better Iowa Daily, editor, 2.
Iowa State Student Sports editor, 3, 4.
Gamma Sigma Delta.

ALVIN JENSEN—“Al”
Elgin, Illinois.
Camp:
Olympic National Forest, Washington. ‘34
Experience:
Iowa Erosion Control Nursery, ‘36
Ames Forester, 2, 4.
Forestry Club, 1, 2, 3, 4.
Basketball, 1.
Baseball, 2.
Veishea, 2.
Intramurals
Phi Kappa Psi.

R. VERLE JOHNSON—“Johnny”
Grand Junction, Iowa.
Camp:
Olympic National Forest, Washington. ‘34
Experience:
Missouri Purchase Unit, ‘34
Technical Foreman, Boss, Missouri, ‘35
Iowa State Band, 2, 3, 4
Veishea, 1, 2, 3.
Iowa State Student, credit mgr. and ass’t.
issue editor, 2, 3, 4.
Forestry Club.
Campus radio club.
Ames Forester, ass’t. editor, 4.
Alpha Phi Omega
Sigma Upsilon.
ALBERT J. LANTZKY—“Al”  
Dubuque, Iowa.

Camp:
Lake Wenatchee, Washington, ’33

Experience:
Carr, Ryder, Adams, Band Saw, Dubuque, Iowa
Ames Forester, 2,3.
Forestry Club 1, 2, 3, 4.
Football, 1.
Polo, 1, 2, 3, 4.
Phi Gamma Delta
Scabbard and Blade

JOHN A. LUNDQUIST—“Lundy”  
Chicago, Illinois.

Camp:
Stanibaugh, Michigan, ’24

Experience:
U. S. F. S., Halsey, Nebraska, ’26
Edward Hines Lumber Co., Barth, Mississippi, ’27
Edward Hines Lumber Co., Lumberton, Mississippi, ’27
Forestry Club, 1, 2, 3, 4.
Veishea.

GAIL McELHINNEY—“Mac”  
Morning Sun, Iowa.

Camp:
Lake Wenatchee, Washington, ’33

Experience:
Iowa Forest and Wasteland Survey, Iowa, ’34
Cherokee National Forest, Copperville, Tenn., ’34
Soil Conservation Nursery, Ames, Iowa, ’34
College Cossacks, 2, 3, 4.
Forestry Club, 1, 2, 3, Treasurer, 4.
Iowa State Agriculturist, 4.

HANS C. MILIUS  
Hudson Falls, New York.

Camp:
Lake Wenatchee, Washington, ’33

Experience:
Nepoore Edwards Paper Co., Nursery Work, ’32
Lake States Forest Experiment Station, Timber Survey, ’34
Ames Forester, editor, 3.
Pack Essay, 2.
Sigma Alpha Epsilon.
Forestry Club, 1, 2, 3, 4.
PAUL F. NISSEN—"John Paul"
Cedar Rapids, Iowa.
Camp:
Deschutes National Forest, Bend, Oregon, '31
Experience:
Iowa Forest and Wasteland Survey, drafting, '34
Iowa Forest and Wasteland Survey, mapping, '34.
Acquisition work for proposed Iowa National Forest, '35
Wrestling, 1, 2.
Pack Essay, 3.
Alpha Phi Omega.

JULES RENAUD—"Moon"
Keokuk, Iowa.
Camp:
Shasta National Forest, '32
Experience:
Iowa Forest and Wasteland Survey, '34
Acquisition Survey, Missouri National Forest, '34
Lake States Forest Experiment Station, St. Paul, '35
Lake States Forest Experiment Station, Michigan, Wisconsin, '35
Basketball, 1, 2.
Track, 1, 2.
Forestry club, 1, 2, 3, president, 4.
Forestry rifle club, 2, 3.
Ag. council, 2.
Veishea, 1, 2, 3.
Ames Forester, 1, 2, circulation manager, 3.
Phi Sigma Kappa.

NELSON SCHLEMMER—"Pete"
Chicago, Illinois
Camp:
Olympic National Forest, Washington, '34
Experience:
Iowa State College Nursery, '33
Iowa State Planning Board, '34
Bureau Plant Industry, '35
Iowa Forest and Wasteland Survey, '35
Forestry Club, 1, 2, 3, 4.
Ames Forester, 3, Art Editor, 4.
Ag Council, 3, Treasurer, 4.
Veishea, 2, Open-house Chairman, 3.
College Cossacks, 2, 3.

VANCE A. TRIBBETT—"Trib"
Heron Lake, Minnesota.
Camp:
Deschutes National Forest, Bend, Oregon, '35
Experience:
U. S. D. A. Experiment Station, South Dakota.
Range Research Asst., '28, '29
Medicine Bow National Forest, Timber Survey, '34
Forestry Club, 1, 2, 4, vice-president, 3.
Forestry rifle club, 1, 2, 3, 4.
Veishea, 1, 2.
JOHN LEONARD WIEHN—“Doc”
   Chicago, Illinois.

Camp:
   Wenatchee Lake, Washington, '34

Experience:
   Iowa Erosion Control Nursery, '35
   Forestry Club.
   Ames Forester, Advertising manager, 3, Art editor, 4.
   Veishea, 2.
   Pep Barbecue ticket sales, 4.
   Intramurals.
   Kappa Sigma.

LLOYD M. ELSTON
   Okoboji, Iowa.

Camp:
   Little Bitterroot Lake, Kalispel, Montana, '30

Experience:
   Mt. Baer National Forest, trail and telephone construction, '29
   Iowa Fish and Game Commission, '31
   N. W. Iowa Forest and Wasteland Field Supervisor, '34
   E. C. W. Junior Foreman, Boone, Iowa, '34, '35
   S. C. S. Camp, Ames, Iowa, '35
   Forestry Club, 1, 2, 3, 4.
   Track, 1, 2, 3.

EVERETT H. CLOKER
   Stanton, Nebraska

HENNING CARLSEN
   Geneva, Illinois

GLEN L. JOHNSON
   Stapleton, Nebraska

MARSHALL THAYER
   Ida Grove, Iowa
Juniors

**SPRING 1936**

Baird, Clarence, *Morning Sun*
Baker, Richard, *Fayette*
Barton, James, *Sioux City*
Baughman, Robert, *Ames*
Bradford, Morse B., *Sioux Falls S. D.*
Cook, Freeman, *Ottumwa*
Cornwell, Wm. G., *Pender, Neb.*
Cranston, Keith, *Odebolt*
Dennenberg, Walter, *Storm Lake*
David, Don, *Des Moines*
Dean, Lauren, *Ames*
DeYoung, Clarence, *Marathon*
Dilworth, J. Richard, *Dubuque*
Ehrenhard, Clayton, *Fremont*
Follen, Wm., *Fairfield*
Granson, John, *Boone*
Gustine, Clarence, *Moville*
Gutshall, Max W., *Van Meter*
Harbour, Ray R., *Ames*
Haukom, Allan S., *Cutler, Wis.*
Holscher, Clark, *Manchester*
Hotchkiss, Jennings, *Marion*
Hughes, Ralph, *Boone*
Huntington, Seth, *Berea, Ky.*
Jule, William, *Sanborn*

Kennedy, Bernard, *Ida Grove*
Kinkor, Clarence, *Calmar*
Lewison, Wayne, *Kanawha*
Matlack, Virgil, *Ames*
McLintock, Thomas F., *Old Greenwich, Conn.*
Miller, Homer E., *Ida Grove*
Mulac, Jaro, *Omaha, Neb.*
O'Neil, Gordon, *Ames*
Patterson, Archie, *Boone*
Perry, James, *Beacon*
Pfeiffer, Hermann, *Waverly*
Reeder, Douglas, *Early*
Saddoris, Thomas, *Jordan*
Scott, Sam, Jr., *Ft. Smith, Ark.*
Secor, James B., *Chariton*
Seeman, Louis, *Woodward*
Smelser, Amos, *Ames*
Smith, Harlie M., *Casey*
Snyder, Richard, *Roland*
Stone, Frederick, *Omro, Wis.*
Stump, William, *Omaha, Neb.*
Tow, Edwin, *Fairfax*
Werner, Hugo, *LaGrange, Ill.*
Wilhelm, George, *Grundy Center*
Wood, Warren, *Blairsburg*
Sophomores

Atkinson, Don W., Ames
Babel, John S., Albia
Bergemeyer, Frederick R., Nora Springs
Beyer, Francis H., Elkport
Bjork, Clayton A., Des Moines
Bjornson, Harold B., Goldfield
Blackman, Samuel R., Parsons, W. Va.
Brandau, William H., Belleville, Ill.
Cafferty, Lloyd J., Lohrville
Chambers, Wayne R., Coralville
Collister, Laurren C., Plymouth
Cummings, Royal E., Brooklyn, N. Y.
Damon, Charles P., Ames
Denison, Gordon D., Des Moines
Domer, Phil M., Ft. Wayne, Ind.
Douthit, Cecil E., Magazine, Ark.
Dykstra, Sylvanus P., Pella
Engelking, Truman G., Iowa Falls
Ferguson, John G., Algona
Fitzwater, William D., Brooklyn, N. Y.
Gates, Earl W., Boone
Goldberg, Joe, Sioux City
Goodner, Thomas B., Searsboro
Griggs, Wendell M., Cedar Falls
Grimm, Roland O., Galena, Ill.
Gunderson, Omar J., Eagle Grove
Halliwell, Claudine, West Allis, Wis.
Hansen, Durwood R., Sioux City
Hanson, Joseph, Elgin
Harrington, Douglas G., Williamsburg
Haynes, George E., Mason City
Helscher, John W., Sigourney
Henry, Wm. E., Boone
Higby, Harold D., Keokuk
Hohenadel, Samuel F., Muscatine
Houston, Jeane A., Jr., Cordora, Ill.
Hughes, Richard M., Sergeant Bluff

Jamison, Glen M., Coin
Kansky, George W., Cedar Rapids
Kellstedt, Paul A., Gaylordsville, Conn.
Kennedy, Wayne F., Oelwein
Kenney, Merlin F., Des Moines
Kindig, Earl R., Washington
Kness, Theodore C., Exira
Korn, Norman F., Ft. Wayne, Ind
Larson, Merlin D., Swea City
Layman, Paul A., Ames
Lischer, Warren J., Red Oak
Machlan, Beryl R., Van Wert
Maris, Albert, Omaha, Neb.
Mecklenburg, Norman A., West Point
Montgomery, Paul W., Sioux City
Morrison, George S., Ottumwa
Mullen, Franklin H., Osceola
Nibe, Donald N., Story City
Peterson, Ansel N., Elk Horn
Quin, Arthur F., Marcus
Reed, George A., Ft. Smith, Ark.
Rise, Carl H., Jr., Rapid City, S. D.
Ryan, Floyd, New Sharon
Schierbaum, Donald L., Scotia, N. Y.
Scotlock, Joseph D., Ames
Shearer, Robt. W., Colfax
Sielski, Benjamin T., Chicago, Ill.
Siverly, Ralph E., Oakville
Smoke, Joe, Shenandoah
Starr, John P., Des Moines
Strickland, Paul D., Kansas City, Mo.
Swanson, Clifford O., Larrabee
Theophilus, David C., Smithland
Tice, Charles C., Waukegan, Ill.
Von Gillern, Robert F., Miles Center, Ill.
Weber, John L., Pomeroy
Williams, Lee R., Coralville
Wilson, John, Boone
Witmer, Carrol R., Maxwell
Wulff, Wilbur A., Council Bluffs
Yoder, Ralph E., Brooklyn, N. Y.
Freshmen

Amundson, Roald, Milford
Artis, Herbert, Cedar Rapids
Ayer, Darrell P., Lead, S. D.
Bahney, Joseph H., Peru, Ind.
Bebensee, Bruce, Council Bluffs
Bennick, John, Kansas City, Mo.
Borsting, Conrad O., Sioux City
Brownfield, Richard, Kelley
Buck, Francis, Des Moines
Busler, Charles E., Danville, Pa.
Carris, Seth, Keota
Chittenden, Dudley, Guilford, Conn.
Cody, Edwen M., Grand Junction
Cook, Francis J., Wheaton, Ill.
Cox, Royce G., Valley Junction
Crellin, James A., Lyons, Neb.
DuBois, Richard, Plover
Dudgeon, Wayne L., Audubon
Ellison, Marlon, Woodbine
Elvidge, Ronald M., Burt
Espensen, Henry L., West Branch
Fariday, Wayne B., Council Bluffs
Farrell, Marvin E., Laverne
Felton, Lawrence, Trenton, N. J.
Fenchel, Clarence F., Strawberry Point
Fisk, Carroll V., Cambria
Froelich, John, Wesley
Gospidar, Richard G., Stanley, Wis.
Grady, Donald G., Van Horne
Grau, Robert B., Newell
Grishaber, Walter R., Marion
Guthridge, Donald C., Kingsby
Hamilton, Donald E., Aledo, Ill.
Hamilton, John W., Ames
Hamilton, Stanley W., Yates Center, Kan.
Hamor, Wade H., Grinnell
Hirt, Robert E., Webster City
Hogelin, Milford C., Guthrie Center
Houston, Charles S., Union Grove, Wis.
Humphry, Robert J., West Union.
Hurd, Richard M., Ottumwa
Johnson, Floyd A., Clinton
Johnson, Glenn E., Garner
Johnson, Kenneth E., Alta
Jones, Marvin L., Sanborn
Jungbluth, Kenneth P., Ft. Madison
Jury, Wilbur M., Knoxville
Leffler, Gustin V., Stockport
Lehmann, Karl T., St. Charles, Mo.
Long, Ronald S., Ames
Lounsberry, Vernon L., Colo
Loynachon, Donald C., Knoxville, Fla.
Marks, Roger W., Marshall, Minn.
Melvin, James K., Peoria, Ill.
Miller, Norman R., East Northfield, Mass.
Millstein, Tom, Kansas City, Mo.
Moen, Alan J., Calmar
Moorhead, Donald W., Muscatine
Morrison, Vaughn O., Grundy Center
Myers, Walter R., Vermillion, S. D.
Oelschlager, Roland M., West Point, Neb.
Pace, Thornton J., Independence
Pameticky, Francis N., Cedar Rapids
Partello, Herald, Boone
Patterson, Arthur K., Rock Hill, S. C.
Patterson, Douglas H., Gourie
Pillsbury, Lewis E., Milwaukue, Wis.
Proctor, Robert E., Nevada
Radcliffe, Arthur D., Ankeny
Reistroffer, Robert J., Davenport
Reupke, Gordon E., Waterloo
Rhine, Doyle D., Conrad
Ross, Charles C., Des Moines
Schnabel, Louis F., Mitchellville
Scholtes, Wayne H., Clinton
Schumacher, Chas. M., Orleans, Neb.
Schwane, Henry H., Cincinnati, Ohio
Stiehl, James H., Charles City
Stoeckeler, Ernest G., Dubuque
Straight, Glenn T., Blockton
Swanson, Harold V., Ames
Swanson, Marion, Ames
Swearengen, Thomas K., Ames
Swendsen, Charles A., Dallas Center
Tedford, Dean N., Gourie
Thompson, Dean W., Lyle, Minn.
Urbatsch, Harley R., Grafton
Uhl, Glenn C., Ames
Westfall, Russell B., Anamosa
Whattoff, Donald J., Ames
White, Ralph W., Boone
Wilson, Carroll C., Colo
Wilson, James R., Colo
Wilson, Kenneth E., Storm Lake
Witherspoon, John C., Rock Hill, S. C.
The old lumberman shifted his cigar. "There's another Iowa car," he observed. "That must be about the fifth one today."

His partner took a step forward and said, "Yah, I hear the Iowa State Foresters are going to have a camp out here, southwest of Bend about 40 miles, North Twin Lakes, I believe. Well, the Deschutes National Forest has some mighty fine virgin yellow pine timber, so I guess they chose a good place."

Such was perhaps the conversation of a number of people in that section of Oregon.

On June 19, the official beginning of the camp, there were 58 enthusiastic young foresters present. Under the able supervision of three pros and a doctor, the following few days were spent in fixing up our temporary home; making saplings into such luxuries as table, beds and racks.

The work completed, we made a survey and found a few differences from previous camps: Maw and Paw Diestler posing as cooks; a library, under the supervision of Miss Margaret Elaine Larsen; all records for size broken by the camp of '35; and for the first time the foresters had a camp hospital, which was under the supervision of Dr. Grant.

On June 23, we had the honor of being the first students to meet Mr. Genaux, our new associate professor of forestry. From our first contact with him we could tell that he was a very likable man. This has been proved further in our later contacts.

The first three weeks were devoted mainly to the study of mensuration, and during which time we cruised a portion of the Pringle Falls Experimental Forest. Professor Thomson was at the helm, assisted by Professor Hartman and Mr. Frost, who was in charge of the experiment station.

It seemed that some of the compasses were affected by local attraction. Tent No. 3 made the discovery that the variation in direction at the end of the strips could be greatly reduced by the use of a scout and a handkerchief.

Then it happened that one morning after the night before,
Dutcher was estimating and said, “Lodgepole—26. Can’t see it, but I guess it’s there.”

On the Fourth of July some of the fellows had the burning desire to conquer a mountain peak, and mountain climbing became quite a sport from then on. However, the thrill of climbing did not satisfy “Brooklyn” Fitzwater, so coming down he resorted to sliding, but his rudder didn’t work and he went into a tailspin. Nothing serious, however, but a job for Dr. Grant.

Professors Genaux and Larsen devoted the next 2 weeks to teaching us the theories of silviculture. We all know how to lay out a sample plot, and what a forest litter is, but some are still in the dark about how the mother tree feeds its young.

THE “Skipper” got kind-hearted and told us we were going to take a trip to Crater Lake, and early on the morning of Saturday, July 17, we started. A good time was had by all, but a better time by some, judging by the fact that two fellows went back a few weeks later.

Back at camp again Professor Hartman took the helm for our logging and lumbering studies. We first visited a logging operation in the ponderosa pine timber. The following day we continued our trip to Bend, where we spent the next few days getting dope on the sawmills there. We also received some first-hand information on fire protection from the supervisor’s office.
We then journeyed across the Cascades to visit a logging operation in the Douglas fir timber.

Once more back in camp we prepared for the final tour. Professors Thomson and Genaux directed the southern trip for those who wished to go that way. Professors Hartman and Larsen took charge of the remaining group on a northern tour.

DURING the summer we were fortunate in having an opportunity to meet and hear such men as F. H. Brandage, assistant regional forester; A. G. Angell, assistant supervisor of Deschutes; “Oz” Beedon, ranger for the Bend district; E. L. Kolbe, junior forester; T. T. Munger, director of the Pacific Northwest Forest Experiment Station; Walter Meyer, professor of forest management at Washington State.

Prof. D. S. Jeffers, now dean of forestry at the University of Idaho, and his family paid us a 3-weeks visit during the summer.

Thus end the travels and adventures of another Foresters' Summer Camp.
“Prof. Mac” at the University of Nebraska—1906.
The Forestry Club 1935-1936

Officers for the First Period—

**MARTIN GRAU** .......................................................... President

There was a vacancy in the vice-presidency

**GAIL McELHINNEY** .............................................. Secretary and Treasurer

Officers for the Second Period—

**JULES RENAUD** .......................................................... President

**CLAYTON EHRENHARD** ............................................. Vice-President

**HERMANN PFEIFFER** ................................................ Secretary and Treasurer

Fall Camp Fire

When the last call for those who were thirsty to partake of a bit of higher learning was made and the doors of the institution were closed the Forestry Department found crowded in its halls a few less than three hundred old and new faces full of ambition and determination.

The herd was soon separated into their respective categories and put to work under the able guidance of Professors Mac-Donald, Larsen, Thomson, Hartman, Geneaux and McComb. We must not forget the invaluable guidance of our office secretary, Mrs. Walter.

Early in the quarter the officers of the Forestry Club got together and laid plans for the Fall Camp Fire. Because of the construction of I.S.C.'s new recreational area the old stamping grounds are being made into a putting green which is no place for foresters to romp and play as they usually do at their conventional outside gatherings. This year we gathered at the 13th Street polo grounds on the banks of the romantic Squaw Creek.

By the time the sun had cast its last rays on the low hills of northwoods some two hundred will-be foresters were scattered over the polo field in small groups burning energy and tearing shirts in friendly games of touch-football.
The dinner gong was sounded. Miles of hot dogs were unrolled, placed hot or cold between buns and consumed while old and new friends exchanged their latest stories.

President Grau had a well planned program for the evening which gave the new students an idea of what the Iowa State Foresters are like. No, alumni, we didn’t have the usual two hour reminiscing of former summer camps!

“Prof. Mac” and his son enjoying a campfire—a few years ago.
Athletes

By WINN HEYER,
Student Sports Editor, '36

CASTING aside boots and breeches, Iowa State foresters turned out in large numbers during the past year to become Cyclone athletes to make up the biggest forestry representation on Cyclone squad rosters in recent years.

In years past the foresters have confined their efforts usually to the mat and wrestling. This year, however, while a number of men took part in the rugged mat pastime, the representation was not as large or impressive as in the days when Dean Holding and Bob Hess and "Red" Gibson, immortal forester wrestlers, tossed Big Six opponents with abandon.

Perhaps the outstanding accomplishment of foresters in the field of sport this year was turned in by Clarence Gustine, a junior, who was elected to lead the 1936 Cyclone grid team in its stormy tour across neighboring gridirons next fall. That doughty Cyclone, not content with having won a letter in baseball the previous spring, came back last fall intent on winning a major award in football.

Gustine played impressive football all fall. While in his first appearance as a regular end in the Oklahoma game, Gustine sprained a shoulder which didn't keep him out of the regular lineup for long. He played well in the home games. His top feat of the year was during the Marquette game when he took passes from Bill Allender, streaked down the field for a touchdown in one attempt and made long gains on several more.

He is the man to whom the feather in the forestry department hat belongs, for he is the first forester football captain in the department for a number of years.
Gustine was far from the only member of the Forestry Department who saw service as a Cyclone grid aspirant. Durwood Hansen, sophomore, played much of the year at tackle. During the Upper Iowa game he intercepted a Peacock pass and galloped—yes, literally galloped—90 yards before he was nailed from behind by Floyd Tate, Peacock halfback. He will make a strong bid for a regular post next season. Wyman Maulsby and Joe Smoke are other foresters who will return next season and will make definite bids for first team places.

Joe Goldberg, Tom Millstein, and Gordon Ruepke are forester freshmen winning grid numerals last fall. They, too, should do well with the varsity when the grid season opens again.

It has been a long time since a forester basketball player has taken his place on the varsity squad. Right now, the department is pinning its hopes for representation on the Cyclone five of the next season with Stanley Hamilton, a freshman from way down in Kansas, who received a numeral award during the past season.

BUT wrestling is still the Iowa State forester stronghold. The sport is not diminishing in popularity with the Sons of Bunyan, but rather a strong crop of freshmen would indicate that the grand old forest pastime is increasing in virility. Keith Cranston, 135-pounder, and former Big Six champion, won a minor letter in the season just ended.

Of approximately eight numerals given freshmen, however, four of them went to foresters. Marvin E. Farrell, Royce Cox, George Haynes and Marion Swanson will make up a potent grunt-and-groan crew in themselves in a couple of years. They will probably be recalling days of Hess and other immortals in a few years.

Water to many foresters means a bath. And for that reason, the majority of the group stays away from water. But this
year John Ferguson, sophomore, literally got in the swim and
copped the first major letter in swimming for the foresters in
a number of years. He took part in the two Iowa State relay
teams which were undefeated for the season.

Freshmen, not to be outdone, won two numerals. Dudley
Chittenden, dash swimmer, and Bill Helscher, backstroker,
won the two awards. Both of these men show every possibility
of taking first team places next season. They will have a
forester companion in the personage of Henry Schwane, who
was out for the squad. Coach Jake Daubert predicts that
Schwane will be the outstanding breast stroke swimmer on the
squad in a short time. Ben Silski was a member of the varsity
swim squad.

Iowa State's championship mid-west polo team has a goodly
number of foresters on the team. Dick Dilworth, a spark plug
in the attack last season, played brilliant polo all year. Max
Gutshall and Walt Smith were also members of the squad.
Gutshall earned a major award.

Baseball and track, spring sports, have forester squad mem-
bers. Bill Follen turned in a successful winter season on the
track and will see action this spring. Carrol Witmer is another
track man. Gustine is a member of the baseball squad as a
fielder and has played regular in early games. Jim Perry and
Don Atkinson are also baseball squad members.
Rifle Club

OFFICERS

Amos Smelser .........................President
Herman Pfeiffer ......................Vice-President
Frederick M. Stone............Secretary-Treasurer
Russel E. Getty.......................Coach

DURING the fall of 1935 the Forestry Rifle Club was organized with the purpose of perpetuating the sportsmanship and good feeling among Iowa State Forestry students and through competition promote a friendly spirit with forestry departments of other schools.

With the large increase in the forestry department this year there was a large number of Forestry students interested in indoor rifle competition, which gives promise of a good team for following years.

The rifle team fired three postal matches during the season of 1935-36. The team won the first match from Pennsylvania State College, but lost the latter two to New York State College and Utah State College.
Foresters Hoe-Down of 1936

By COEN EHRENHARD, '37 and GLENN BALL, '36

The Country Club that wintry day
Stood empty, silent, cold and gray,
But lo, by night it stood transformed.
The lanterns glowed; the place was warmed.
Fur robes and horns adorned the walls.
The time turned back through history's halls
To gold rush days of forty-nine
And famed dance halls of that gay time.
In front a sign proclaimed afar
That this was Skipper's Ace High Bar.

They came from the campus that gleamed beyond,
The Foresters with brunettes and blonds.
They wore high boots, loud shirts, old hats,
Kerchiefs, big guns, tin pants, or chaps.
They stormed the place and yelled "Let's go."
The band tuned up and began the show.
Gerge Shuey's tunes went round and round.
The bang of guns was heard down town.
The dancers dipped, went round in whirls,
Just care free boys and laughing girls.

With mirrored walls and glass a-gleam,
An old-time bar enhanced the scene.
And from behind, to those who would,
Came cups of cider sweet and good.
Hilarity, good will, good cheer,
These all were in the atmosphere.
And when the dance came to an end,
And time the homeward trails to wend,
Nowhere was there a soul, not one,
But that agreed it all was fun.
Game Banquet

At the beginning of the school year plans were laid for the Second Foresters Game Banquet. Due to technical reasons (poor marksmanship) the call "let's eat" wasn't issued until January. So on January 16 some seventy-five "true" foresters plowed through three feet of snow to Lynn Fuhrer Lodge and feasted upon wild game prepared by some of the more efficient cooks of the department and supervised by our "Forestet" Miss Halliwell.

After consuming more food than is good for any human, the gang proceeded to fill the room with that blue haze common when cheap cigars are smoked (all due respects to our good friends, Doc Aikman and Doc Sass), while Toastmaster Tribbett presented a short, snappy and interesting program.

At a late hour the doors of the lodge were closed to mark the end of the second successful Game Banquet sponsored by the Iowa State Foresters.
"Prof. Mac" as a mountain climber.
‘Prof. Mac’ Honored by Alumni at Silver Anniversary Banquet

ON February 22, 1936, the Iowa State Forestry Department entertained the greatest assemblage of alumni, students, professors and former professors ever witnessed here in honor of Prof. G. B. MacDonald's twenty-five years of service as head of the forestry department.

In spite of blizzard blocked roads, ninety persons attended the celebration dinner. Following the dinner, Mr. L. E. Hicks, '15, congenial chairman for the occasion led the group through an evening of rapid-fire entertainment entirely lacking in dull moments.

Dr. Friley, President of Iowa State College, Dean Curtis, senior dean of Agriculture, Professor Pickett, head of the Department of Horticulture and Forestry, Mrs. Frankel, chairman of the Iowa Conservation Commission, Mr. M. L. Hutton, director of the state Conservation Commission, Mr. T. R. Truax, '12, and Mr. A. W. Toole, forest supervisor for the Hawkeye Purchase Unit, all followed each other in a quick succession of interesting talks highly complimentary to the accomplishments of Prof. Mac. Frequent reference was made to his Scotch ancestry.

PROFESSOR R. B. THOMSON read several letters from graduates unable to attend, and several telegrams recently received from Raphael Zon and others.

The speaker of the evening was E. A. Sharman, '96, the first alumnus to whom Iowa State foresters may lay claim, and now Assistant Chief and Advisor to the Chief of the U. S. Forest Service. He had planned to read his talk but sensing the opportunity for informality, abandoned the manuscript.

Following this talk, Professor G. B. Hartman, '17, presented Prof. Mac with a huge volume containing letters from almost every one of the graduates, former students and staff members, with the instructions that he should, when his feet “de-
veloped bunions till they hurt” take time to read them. At the same time Professor Hartman presented Prof. Mac with a large envelope containing considerable cash as a gift from the alumni and staff members, stating that the intention was that the gift would help him finance that trip to Europe which all great foresters dream about and few realize.

Prof. Mac then took the floor and accepted the gifts and acknowledged the compliments that had been showered upon him all evening with the rather startling statement that he wasn’t “fooled by all the compliments since others have been responsible” for his success. Mrs. MacDonald who was the final speaker was the one to whom Prof. Mac attributed his success.

THE MAN WHO LIKES A TREE

I like a man who likes a tree
And wants no better company,
For such a man I always find
Is just the very sort and kind
Who’s not content unless it be
He, too, can grow much like a tree.

I like a man who likes a tree,
No further introduction he
Will ever need to win my heart;
To me he is the counterpart
Of usefulness, and comfort, too,
And does the good few others do.

I like a man who likes a tree,
He’s so much more of a man to me;
For when he sees its blessings there,
In some way, too, he wants to share
Whatever gifts his own may be
In helping others, like a tree.

—Chas. A. Heath.
Alumni

F. F. Balthis, 1907

FROM the time he graduated in 1907, until the war turned everything upsidedown, R. F. Balthis was employed by the P. S. Forest Service in Arizona and New Mexico. During this time he advanced through the various grades in the administrative scale, finally becoming supervisor.

In 1917 he returned to Iowa, farmed for a while, and worked as pay roll clerk for the Government until the armistice was signed. Private timber work then took him back to the southwest, Colorado this time, and there followed a period of study at Colorado Agricultural College, culminating with his receiving an MS degree.

In 1929 Mr. Balthis entered the Texas Forest Service as Assistant State Forester, and the Lone Star State has retained him ever since.

"You will note," he points out, "that my past has been somewhat varied as to activities, but often circumstances alter cases. At present most of my work is along administration lines. I also have a great amount of research work to look after. I represent the Texas Forest Service, in general, throughout the southeastern part of the East Texas timber region and have administrative charge of all forestry activities on two state forests." This, for a state the size of Texas, would seem to be a formidable assignment.

"I'm living out on State Forest No. 1, five miles southeast of Kirbyville, Texas, in the heart of the East Texas timber region. We have a nice place. Come down and see us sometime and learn how pine trees grow."

E. M. Davis, 1918

A TRANSFER student from Carnegie Tech., E. M. Davis entered what was then "Ames" in February, 1914. Three and a half years later he left school to enlist in the Forestry Regiment and sailed for France. On the way his transport ship, Tuscania, was sunk. "This," Mr. Davis adds, "was my nearest approach to action." For almost two years his work was scaling maritime pine, acquisition in the Auvergne, and translation at the A. E. F. University, Beaune, Cote d'Or.

In 1919 Mr. Davis was employed in the slightly less prosaic work of inspection and foreman jobs with creosoting and railroad companies. This experience provided him with a background which enabled him, in 1922, to join the staff of the Forest Products Laboratory. In 1925 he was
awarded an MF degree by Ames, and since then has completed the equivalent of a year's work on land economics at the University of Wisconsin.

"At present," Mr. Davis tells us, "I have charge of work dealing with the machining properties of wood, that is, the way woods behave when planed, turned, shaped or put through other common woodworking operations. What factors are involved? To what extent can we govern them? What operating conditions give the best results in different species? This is an almost virgin field. If we are growing wood for use we need to know all about the factors that influence usability; we need to increase the satisfaction which wood gives in use and so help it to hold its own in competition. You will see from this that I, like all other research men, just know that my pet project is the most vitally important one that ever came down the pike.

J. A. Gibbs, 1927

J. A. GIBBS, '27, was established in Region 2 with the U. S. Forest Service after graduation, and remained there for three and a half years. Then, quite a far cry from timber sales and surveys, and ranger-district administration, he became Extension Forester in Connecticut, a state seldom thought of in connection with forestry. Here, for seven years, he divided his time between farm forestry extension work and teaching. "This experience," writes Mr. Gibbs in part, "has led me to feel that of the various classes of woodland owners there are none more advantageously situated to practice woods management than that of the average farmer." And to illustrate, he points out the low overhead, intimate knowledge of soil, home labor supply and markets for such forest products as he—the farmer—can raise.

In 1934 Mr. Gibbs was granted leave to join what was then the Soil Erosion Service in Ohio, where he has been ever since.

Speaking of the recently formed Soil Conservation Service he says: "It has been a real opportunity to assist in developing this new organization and its broad program of a sound permanent land use. Working side by side with agronomists, engineers, soils men, and others interested in land use, it has afforded an opportunity for all of us to get a very broad viewpoint of land use. And too it has afforded each specialist an opportunity heretofore unparalleled to sell his particular phase of land use into the organization at large. It has been very gratifying to me to realize more and more that forestry makes a very direct and important contribution in this program of soil and water conservation and it has been a genuine satisfaction to be in a position to help build up the forestry part of the program."
THE 1936 AMES FORESTER

E. H. Steffen, 1913

The career of E. H. Steffen since his graduation from Iowa State in 1913 is notable for its almost unswerving devotion to one phase of forestry—grazing and range management. Immediately following his graduation, Mr. Steffen joined the U. S. Forest Service on the Wallowa National Forest and remained here for four years on grazing and grazing administration work. In 1917 he shifted his scene of operations to the Modoc National Forest, and the next two years were spent in grazing administration and timber sale work on the Klamath National Forest.

In September 1919 the academic instinct came to the surface and Mr. Steffen resigned from the Forest Service to accept a position as professor of forestry and range management as well as Head of the department, at the State College of Washington.

As administrative head, however, active interest in his favorite field did not dwindle and frequently summers were spent on blister control work with the U. S. Department of Agriculture, and on grazing studies with the Pacific Northwest Experiment Station.

Teaching claims the major portion of his interest, Mr. Steffen says. "Here particular attention has always been given to the field of range management as it related to the use of forest ranges. Now with grazing control being worked out on the public domain ranges under the Taylor Grazing Act, the field of grazing management assumes still greater importance."

R. B. McKennan, 1926

In a series of jumps that have taken him through many states and National Forests, R. B. McKennan has seen a good deal of varied conditions of growth, management and administration of our national domain since graduating from Iowa State in 1926.

Considerable experience in timber surveys on the Arapho, San Juan, Harney and White River National Forests, interspersed with his schooling, provided a background which enabled him to qualify as surveyman for the Rainy Lake Reference Project along the International Boundary of northern Minnesota and southern Ontario. Here, under the U. S. Engineering Corps of the Department of War, transit triangulation systems were established, contour maps made, lake shores traversed, streams gauged, timber estimated and land appraised, along with other details which are coincident with such projects.

After two years of this, Mr. McKennan qualified as Forest Ranger on the Upper Michigan National Forest, at Munising. From here he has made rapid strides to Senior Ranger, Assistant Supervisor on the Chequamegon, then back to the Upper Michigan as Supervisor. In November of last year he was selected to take over supervisory duties on the new Wayne National Forest at Columbus, Ohio, and has remained there since.
Paul M. Dunn, 1923

Upon graduation from Iowa State with the class of 1923, Paul M. Dunn achieved another step in an exceedingly interesting and varied career. With U.S. Army experience in Mexico, enlistment in France during the war, several years of Iowa farming, and four years of college behind him, he came back for graduate study in the fall of '23.

With the old elusive spectre of no ready cash making things difficult, he tried his luck with journalism, having been active in campus publications while in school. The forestry in his blood was too strong to be denied, however, and in 1926 he joined the Missouri State Forestry Department as Associate State Forester. After five years of close contact with such widely divergent phases as fire, wild life, and public relations, he resigned to accept a position as extension forester and assistant professor in the School of Forestry of the Utah State Agricultural College, at Logan.

"After encouraging the planting of trees on the edge of the desert, and 4-H club projects during the spring and summer, and teaching Utah Foresters each fall and winter for four years, I was offered the job of managing the School of Forestry last September. This is a very enjoyable position but one that makes me appreciate what it was that kept Prof Mac always on the run."

With interest, ambition, enthusiasm, and the incentive of 350 students of forestry, range and wild life he promises to "go places" with his school. "I hope to assist the school here," he writes, "to carry out plans which will permit its graduates to be as proud of U.S.A.C. as I am of Ames."

H. G. Meginnis, 1928

A good illustration of Prof. Mac's oft uttered theory that you never know what field you will finally go into, regardless of what you prepare for, is shown in the case of H. G. Meginnis, who after receiving his BS degree in 1928 and MS in 1929, accepted an appointment with the Southern Forest Experiment Station at New Orleans.

Prepared for an administrative position with the Forest Service, and blessed with a faint contempt for men who went into re-
search, Mr. Meginnis reported to New Orleans and was assigned to the new erosion-streamflow project, dealing with erosion on the Mississippi. And he writes: "Today finds me on the same job after seven years of absorbing work in a phase of forestry little understood and scarcely more than explored in a preliminary way."

In that time interest has developed understanding, and he offers the testament that "Of the various phases of forestry it is my belief that few are broader in scope or are in greater need of investigation that that phase pertaining to forest influences."

New concepts of forest values have been developed and Mr. Meginnis finds changing of standards of management becoming more and more a necessity, "In many arid sections of the west water yields are no longer being classed as merely indirect or intangible products of the forest. It is highly probable that many forests now managed for the commercial products they yield will sometime in the future be managed primarily for watershed or related uses now subordinated or almost entirely overlooked."

An Iowa Section of the Society of American Foresters

THE Minnesota Section of the Society of American Foresters was scheduled for a meeting at Ames on February 22, 1936. However, due to severe snowstorms and blocked roads, the Minnesota contingent containing all the officers for the section, was unable to put in its appearance. Professor R. B. Thompson was appointed chairman and vested with authority to conduct the meeting in the absence of the regular officers.

In spite of the blustery weather there were twenty-two members present, mainly from Iowa. Because of the difficulty experienced in attending meetings of the Minnesota Section, of which Iowa is a part, and because of the increasing number of foresters in the state, it was suggested that Iowa should establish a section with headquarters at Ames, and a petition to this effect, signed by all those present, resulted.

The petition was denied by the society council. A portion of the letter written by H. H. Chapman, president, follows: "The decision of the council is not to grant the request. "I recommend that your group take up with the Minnesota Section the formation of a subsection with a vice-chairman similar to existing arrangements in other sections, such as the Puget Sound and Columbia River Sections."

This recommendation will, no doubt, be followed.

It was pointed out by E. A. Sherman and others attending the meeting that Iowa State College would be the ideal place for headquarters of the new section because of the housing facilities available and because of the stimulated interest the forestry students would provide. Meetings of the Society are open to the public (business meetings excepted).
Are Foresters Impractical Idealists?

Editorial note: The first of the two letters appearing below was received by one of our students after applying for work for the summer with an influential lumberman friend of the Northwest. It was referred to the student’s father, who is a business man, and he wrote the rebuttal printed in the second letter below, which would do credit to a trained conservationist. For obvious reasons fictitious names are used.

Portland, Oregon
March 14, 1936

Mr. Frank Ward
Ames, Iowa
Dear Frank:

I appreciated your fine letter, but was somewhat surprised to learn you were studying to be a trained forester. I can give you a job and will be glad to have you. However, past experience has taught me that schooling you have had isn’t going to make you any more valuable to the lumber industry.

During my entire life I have been in the lumber business and rather closely associated with government foresters in one way or another. Only a handful of those I have met ever had any practical experience in the lumber business from the stump to the finished product in the car. With those few exceptions, I think I can safely say that they have all been a theoretical bunch with many nice sounding ideas but far too many impractical ones. After all, they must cooperate and work with private individuals and unless they understand the problems and hazards incident to the production of lumber from the trees which they grow and care for, they must necessarily remain impractical idealists.

Since we have plenty of labor out here now, wages are quite low. My advice to you would be to get yourself a job with a good, live, going lumber concern manufacturing lumber in all its phases and fill your head with practical ideas.

Very truly yours,
Max West.

THE REBUTTAL BY DAD

March 28, 1936

Dear Son:

Max West’s letter was interesting, but shows very distinctly the trend of mind usual in a strictly commercial business executive. Max looks at the lumber business from one point only—how many trees he can cut down and turn into lumber, how cheaply he can do it—and how much profit he can make on the lumber he sells. Whether it be the lumberman, farmer, miner, or any other line that makes its money from what it takes out of nature or the ground, the view point is usually the same. The all important thing is to get the last cent of profit out of it regardless of consequences. They will all remonstrate that they are for the conserving of natural resources and will continue blithely to cut every tree that can be turned to profit. The farmer will till every acre possible without thought that his children will inherit a desert.
Witness the passing of wild birds and game, eroded landscape and depleted forests. When the eastern part of South Dakota was criss-crossed with drain tile to make available additional acres for cultivation some twenty-five years ago so the water could get to the Gulf in the least possible time, they played the first card in the game of making a waste of that part of the country. On the farm at home our well was eight feet deep and we could never pump it dry. We had a nice stream running through the farm that ran winter and summer and two nice springs that were never dry. The stream and springs haven't had a drop of water in them for the past five years and the well is dry. Last year we dug a well forty feet deep and can pump it dry in thirty minutes. Another well drilled 130 feet deep has no water in it. The sub-soil moisture that should have been conserved there is being used by the fish in the Gulf of Mexico to swim in.

Sooner or later we are going to get wise to ourselves and see that surface geological changes are not necessarily slow in action. It is easily possible to believe after seeing what our dust storms did in one short season that Egypt was changed from a blooming paradise to a sandy desert in a comparatively few years. We do know that it was an intensely fertile country in the time of the Pharaohs and yet as far back as history goes it has been a desert after that.

It is undoubtedly true that a lot of bald theoretical professors may not be practical, yet they are a valuable balance wheel. Did you ever hear of a lumberman planting any trees with his own money? Have you ever heard of them kicking in with money and work to control the pine beetle and other insect pests and diseases? I believe you will find that this work is done mostly by the theoretical men who probably would go broke in the lumber business.

Note what Max says about labor and wages. The pay depends on how little the man can live on and how big a supply of labor there is—not on how much the men earn for the owners. I am not criticizing, as this is a matter of business, just as it is a matter of business to see how quickly every merchantable tree can be cut and sold and the money put in the bank or the hands of the stockholders.

It is well for you to learn both sides of forestry so you will know what you are talking about, and should you go into the commercial end you will be just that much more valuable if you do know the theoretical side of the question. There may be more money in cutting down a million trees than in planting and protecting that many, but if you could do either one or the other in the next ten years, what do you think you would get the most kick out of seeing when you were, say, sixty, a million mature trees or a million stumps? When your hair is gray or gone, which million would you rather point out to your friends and say, "I did this myself?"

Best wishes,

Dad.
Afield With the Alumni

Carl Kupfer, '07—Moravens is here in the station and doing well. See M. L. Merritt occasionally.

W. G. Baxter, '08—Harlan, Scott, and I are going to make 5 million trees grow where none grew before.

Shirley Allen, '09—On my leave this spring, I will secure data on the National Parks for teaching courses in forest administration, and during the summer and fall I will study municipal forestry in Europe.


L. R. Lessel, '12—V. Schroeder is employed on this forest.

R. A. Olmstead, '12—I visited with Mr. and Mrs. W. A. Smith this winter while in California.


William Harley, '15—Saw Hugh Cassidy for a few minutes. He is on special detail to the regional office.


John Moorhead, '20—Have corresponded with Lloyd Wall at Flagstaff.

Harkey Helm, '21—Saw Deming, Wall, Cassidy, Holtz, Beveridge, Gottschalk, Smith and Howell.

Vernon Fisk, '21—Hope to plant about 200,000 trees from this camp this spring.

DeWitt Nelson, '25—I'm now liaison officer between all technical services and the U. S. Army in the 9th Corps Area.


Glenn Durrell, '25—I attended the Atlanta S. A. F. meeting.

Francis Barnoske, '26—Haven't seen any Ames foresters.


G. D. Pickford, '26—How about sending more Ames men out to Region 4?


A. V. Wiggins, '27—Have had several visits with Boeger, Hicks, Runkle, and Maas, but that was right in line with the work we are all engaged in.

John Nagle, '27—Have seen Shorty Hogan, Bill West, and Svendby.

C. Eugene Farnsworth, '26—Teaching surveying, silviculture, and forest management at the New York State Ranger School.

Neil Fullerton, '27—Have had several visits with Professor Jeffers.


Raymond McKinley, '27—C. E. Anderson, '31, working as assistant ranger on the Sumpter Forest.

Orrin Latham, '27—Doing revision of management plans for Ouchita Forest while I'm on vacation from the New York State Ranger School.

Sam Battell, '28—At present running a transient camp on the Winona District of the Clark.

Mark Ratliff, '28—Still ranger on the Medicine Bow.

Donald Ball, '28—Am instructing in the Region Nine Training School, whose purpose is to bridge the gap between the forest school, where broad principles are taught, and the application of these principles.

Fred Boekel, '28—Saw John Kulp at Des Moines when Iowa State looked so sick against Drake.

Harold Scholz, '29—Am carrying on the forest influence—soil erosion research for our station.
John Kulp, '29—In the past six months, I have been working on a master plan, T. S. I., rodent control, scalping and planting, and cultural surveys.


Nat. B. Hanson, '29—Several Ames men with the Soil Conservation Service were located here last summer collecting wheat grass seed.


W. M. Beveridge, '29—I find that the reports in a Supervisor’s office take quite a lot of time.

Luther Burkett, '30—Saw Giffen and Ball.

Jack Diemer, '30—For a year and a half now I have been with the Forest Survey. Have seen all kinds of alumni.

E. F. Heacox, '30—I hope to stay with Weyerhauser long enough and live long enough to be in on the ground floor when this company launches a genuine sustained yield forestry program.

R. D. Holtz, '30—I was transferred from Zuni, N. M., in May, 1935, to the position of Forest Supervisor of this 2,750,000 acre Indian reservation.

N. D. Millard, '30—Have a new boy, born April 16, 1935. I have one of the most scenic districts on the Sawtooth, with a large amount of recreational use.

J. H. Stoeckeler, '31—Now Assistant Silviculturist at the Lake States Experiment Station.


Lloyd Roche, '31—Transferred to Kahoka, Mo., on Oct. 20, 1935.

Maynard Smith, '31—Four foresters are employed on the Rio Grande Project.


Russell Chipman, '31—Stradt and I are showing these rebels how to plant trees this winter.

Wendell Harmon, '32—The homestead was an interesting and worthwhile experience. As for my present job, we’ve been thinning in second-growth yellow pine stands.

Helmer Anderson, '32—Transferred seven times within the Superior. Where next?

Harold Coons, '32—Junior Forester working on master plan.


George Kline, '32—Wedding day set for April 2, 1936. John Christensen and I have been working together near Grand Marais.

Charles Swanson, '32—J. Christensen is on the Gunflint and doing well.

Hugh Steavenson, '33—Married Dec. 19, 1935. This place is so isolated it is not frequented by any other Ames foresters, and that’s really being isolated.

Wendell Stone, '33—I’m the one Junior Forester designated to act as the official “fire-bug” on “controlled” burning on the DeSoto Forest.

Jacob Jauch, '33—Put in a busy season last year as my first experience as a district ranger. Celebrated New Year’s Eve by getting married in Delaware.

M. R. Dunn, '33—Am wondering why so many of the old gang have gotten married. Guess they can’t take this forestry business without a little consolation after hours.

L. M. Gibson, '33—Tell Bob Hess my son is ready to take his son (that is if Bob has gotten up nerve to have one yet).
Fred Gottschalk, '33—Saw Helm, '21; Axle Grau, '33; Dannen, '33; Bob Hess, '33; and Dean Holtz, '30.

Einar Henrikson, '33—Still trying to show these agronomists how to plant trees and make tree toads out of them—some job! Sue Elaine arrived Nov. 30, 1935.


Everett Jensen, '34—Saw Ivan Sack, Dave Ilch, and DeWitt Nelson.

Arthur Lehmann, '34—Passed the J. F. in 1935. Am resignedly awaiting the political millenium that will send us back to the breadlines.

Bob Hess, '34—Saw D. B. Merreritt the other day. Garrulous Gottschalk writes from Albuquerque that he can now yowl as loudly as 10 coyotes and hopes to make it an even dozen by spring.

John Hubbard, '34—Have seen Lehmann in St. Paul and had a little “bull session” with him. Also Richman, Duer, Renaud, Sauer, Diemer, Scholtz, and Moser, all working for the Lakes States Station.

Lyle Chisholm, '34—Had a short visit with H. S. Coons at Glidden, Wis. in December. Am getting plenty of practical forestry now.

William Duerr, '34—They say that five authorities on growth (granted there are that many) if brought together and asked for an opinion, can give as many as 137 conflicting opinions. Hence I feel that one or two more (about my limit as a beginner) will not add too seriously to the confusion.

Donald Hodges, '35—Married to Miss Ila Stott of Beloit, Wis., on Dec. 13, 1935. Worked with Del Ostermann in July at Bloomfield, and from August to October at Ames.

Reuben Jacobsen, '35—Saw Lawrence Batty of the Ottawa Forest. I transferred to this camp last November.

E. J. Downey, '35—Completing my tenth year at hard labor in the profession of forestry, although my degree is dated 1935.

J. I. Christensen, '35—Have seen Charlie Swanson, "Moose" Kline, and Helmar Anderson recently.

Ralph Harvey, '35—Worked with Runkel, Boeger, Lee, Sudor, Bailey, Poshusta, and Curtis in the S. C. S. last year.

Dorsey Morris, '35—This camp is a veteran's camp and I'd just as soon move soon, and may on request. Section corners down here are as scarce as A's in Elwood's class.

Paul Muller, '35—Back at Hardinsburg planting black locust on the Kentucky hillsides.

Oliver Olson, '35—My plans are to sit pat with headquarters here until I can get something else or until the weather warms up in the North.

W. R. Rottman, '35—Bob Hutchinson and I are working for the Re-settlement Administration.

Paul Libby, '36—I'm in a colored camp of the Soil Conservation Service
Alumni Directory—1936

1896
E. A. Sherman, Asst. Chief Forester and Advisor, 4103 Military Road, Washington, D. C.

1900
W. H. Mast, Davenport Nursery Co., Davenport, Iowa.

1904
Karl A. Kupfer, Northwest Forest Experiment Station; 4324 N. E. 26th Ave., Portland, Oregon.

1908
W. G. Baxter, Associate Forester, Plains Shelterbelt Project; 731 Moro St., Manhattan, Kansas.
H. E. Haeffner, 1394 Ferry St., Eugene, Oregon.

1909
Shirley W. Allen, Professor of Forestry, School of Forestry and Conservation, Ann Arbor, Mich.

1911
R. L. Barrett, 323 South Ripley St., Neosho, Missouri.
F. G. Freeman, 220 West 3rd St., Santa Anna, California.
L. A. Reynolds, U. S. D. A., Farm Program; 6319 33rd St. N. W., Washington, D. C.
P T Smith, County Agent, Redfield, South Dakota.
J. C. Whitham, Forest Supervisor Callatin National Forest, Bozeman Montana.

1912
L. R. Lessel, Supervisor, Gila National Forest, Silver City, New Mexico.
A. C. O’Banion, County Agent, Park Rapids, Minnesota.
H. H. Richmond, Logging and Mercantile Business; Cass Lake, Minnesota.
R. A. Olmstead, Dundee, Oregon.
W. A. Smith, Whittier State School, Whittier, California.
T. R. Truax, Forest Products Laboratory, Madison, Wisconsin.

1913
L. J. Baxter, Galva, Iowa.
H. B. Clark, C. C. C. Camp Superintendent, Camp S-100, Guthrie Center, Iowa.
R. L. Hensel, S. C. S., San Angelo, Texas
H. I. Ringheim, Monarch Lumber Co., Elrose, Saskatchewan, Canada.

1914
W. C. Hassel, 1158 J Avenue, N. W., Cedar Rapids, Iowa.
R. W. Hayes, Head of Department of Forestry, University of Louisiana, Baton Rouge, Louisiana.
J. C. Sterrett, Villa Park, Illinois

1915
H. E. Hansel, County Engineer, Wapello County, 138 South Milner Street, Ottumwa, Iowa.
L. E. Hicks, Camp Superintendent, U. S. F. S., Albia, Iowa.

1916
H. O. Cassidy, 304 Agriculture Building, University of Arizona, Tucson, Arizona.
H. H. Cornell, Senior Regional Inspector, 405 State Capitol, Oklahoma City, Oklahoma.
Max Geisler, 5240 Sheridan Road, Chicago, Illinois.
H. H. Plagge, Pomology Section, Iowa State College, Ames, Iowa.
N. O. Plagge, 156 West Main Street, Barrington, Illinois.
W. R. Rumbaugh, Collins, Iowa.

1917
George B. Hartman, Department of Forestry, Iowa State College, Ames, Iowa.
A. S. Henry, Bell Telephone Co., Sioux City, Iowa.
J. H. Quint, 143 North Brand St., Glendale, California.

1918
E. M. Davis, Wood Technologist, Forest Products Laboratory, Madison, Wisconsin.
J. F. Donahoo, 3148 Iowa Avenue, Fresno, California.
F. D. Hadlock, General Electric Company, 612 Madison Avenue, Plainfield, New Jersey.
Theodore W. Rechmann, Real Estate and Investments; 206 Flynn Building, Des Moines, Iowa.

1920
Carol J. Baker, 3455 Blaisdale Avenue, Minneapolis, Minnesota.
Milo Deming, U. S. Grazing Division, 422 Federal Building, Salt Lake City, Utah.
R. A. Fletcher, 10 Murdock Court, Oakland, California.
V. B. Hoyer, Camp S-81, Rockbridge, Ohio.
John W. Moorhead, 550 Fifth Street, Richmond, California.
D. C. Poshusta, Camp Superintendent, C. C. C. Camp, McGregor, Iowa.
L. A. Wall, Associate Range Examiner & Assistant Supervisor Coconino National Forest; U. S. F. S., Flagstaff, Arizona.

1921
N. A. Avery, U. S. F. S., Denver, Colorado.
C. P. Corman, 1523 Touhy Avenue, Chicago, Illinois.
Vernon C. Fisk, Forester, Soil Conservation Service, Menomonie, Wisconsin.
H. J. Helm, Soil Conservation Service, Rio Grande District; 205 South University Ave., Albuquerque, New Mexico.
Wen Ming Ling, Kwangsi University, Wuchow, Kwangsi, China.
1922

K. J. Buck, 3160 Dodge Street, Apt. 3, Omaha, Nebraska.
William C. Eggers, Long Bell Lumber Co., 1631 Northwest Drive, Des Moines, Iowa.
Robert E. Fennell, 310 North Illinois Street, Indianapolis, Indiana.
F. L. Moraverts, Forest Resource Survey, 6th and Main Street, Portland, Oregon.

1923

A. J. Bogen, 10047 Mark Twain Avenue, Detroit, Michigan.
Paul M. Dunn, Head Forestry Department, Utah State Agricultural College, Logan, Utah.
Clarence Prout, Division of Forestry, State Office Building, St. Paul, Minnesota.
Fred B. Trenk, Extension Forester, University of Wisconsin, Madison, Wisconsin.

1924

C. W. Martin, Resettlement Administration, Old Lyme, Connecticut.
Allen F. Miller, Supervisor Manistee N. F., 1144 Sanford St., Muskegon, Michigan.
Frank J. Sutter, 1222 Jarvis Avenue, Roger Park Station, Chicago, Illinois.

1925

Lynne M. Correll, U. S. F. S., South Building, Room 3011, Washington, D. C.
Joseph Howell, Associate Forester, Southwest Region Soil Conservation Service, 204 Princeton Avenue, Albuquerque, New Mexico.
William N. Lough, 2919 S. Hoover Street, Los Angeles, California.

1926

Francis Barnoske, Wheeler Lumber Bridge and Supply Co., Box 391, Hestings, Nebraska.
Neils K. Clemensen, Regional Forester, Arkansas State Forestry Commission, Camden, Arkansas.
Charles Greer, Curtis Co., 490 Courtland Terraces, Marion, Ohio.
C. Lewis, Harrison, Asst. Supervisor, Chippewa National Forest, Cass Lake, Minn.
Milvaj Hasek, 2731 North Clark Street, Chicago, Illinois.
Theodore Kouba, Dept. of Agriculture, State House, Room 9 West, Madison, Wisconsin.
George S. McIntire, Asst. State Forester, 1235 Climax Street, Lansing, Michigan.
Russell E. Meyer, 3455 Queen Lane, Philadelphia, Pennsylvania.
Gerald D. Pickford, Intermountain Forest and Ranger Experiment Station, Ogden, Utah.
Nathan C. Schulze, 1200 North Foothill Boulevard, Pasadena, California.

Clarence Svendby, 1702 Opal Avenue, Pullman, Washington.

Chester W. Walling, Chicago Mill and Lumber Co., 1623 South Prospect Avenue, Park Ridge, Illinois.


G. C. Hutchings, Route 1, Henderson, Colorado.

Marien D. Jackson, 727 Ellis Street, Stevens Point, Wisconsin.

Orrin Latham, New York State Ranger School, Wanakena, New York.

Raymond McKinley, 2614 Gervois Ave., Columbia, South Carolina, U. S. F. S.


Charles A. Rindt, Wellston, Michigan.


George A. Turney, District Ranger, Wakefield, Michigan.

E. L. Vinton, 1603 21st Street, Superior, Wisconsin.


George Armstrong, District Ranger, Santa Anita District, Angeles National Forest, Sierra Madre, California.

Donald R. Ball, Instructor, Region 9 Training School, Eagle River, Wisconsin.

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Leslie H. Kahler, Soil Conservation Service, 605 West 2nd Street, Washington, Missouri.

Paul T. Kreager, Box 775, San Antonio, Texas.

Wm. M. Lepley, State College, Pennsylvania.

Orville Lester, Indianola, Iowa.


Orville Sonnor, Hamburg, Iowa.

Walter F. Sullivan, (M. S.) 351 Turk Street, San Francisco, California.

Walter Wicks, 3701 Columbus Avenue, Minneapolis, Minnesota.


Wilson M. Beveridge, Asst. Supervisor, Sitgreaves National Forest; Box 127 Holbrook, Arizona.

A. G. Chapman, Central States Forest Experiment Station; 168 14th Avenue, Columbus, Ohio.

Irving L. Christensen, C. C. S., 405, 15th Street, Bethany, Missouri.
Nat B. Hanson, U. S. Indian Service, Rosebud, South Dakota.
Arthur Holding, Range Supervisor, Cheyenne River Indian Agency, South Dakota.

E. M. Howell, Forest Ranger, Van Beuren, Missouri.

John Kulp, Junior Forester, Chippewa National Forest; Box 297, Bena, Minnesota.


Harold Morey, 335 Prospect Avenue, New Haven, Connecticut.

Roy W. Olson, U. S. F. S., Portsmouth, Ohio.

Harold Scholze, Lake States Forest Experiment Station, University Farm, St. Paul, Minnesota.

1930

Luther B. Burkett, District Ranger, U. S. F. S., Medford, Wisconsin.

Richard M. DeBower, 5108 North Leavitt Street, Chicago, Illinois.

Jack A. Diemer, Lake States Forest Experiment Station, University Farm, St. Paul, Minnesota.

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Floyd A. Nichols, C. C. C. Camp, Montrose, Colorado.

George Pecaro, Press Board Superintendent, 1410 Washington Street, Greenville, Mississippi.


Maynard J. Smith, 1001 Jones Street, Sioux City, Iowa.

Gordon Soderberg, Mead, Nebraska.

Margaret Stoughton (Mrs. Abell) Appalachian Forest Experiment Station, 223 Federal Building, Asheville, North Carolina.

Joseph H. Stoeckler, Asst. Silviculturist, Lake States Forest Experiment Station, University Farm, St. Paul, Minnesota.

Lloyd D. Wambold, Forester, Diamond Match Co., Sterling City, California.

1931

Ellsworth Benson, Randolph, Nebraska.

Harold Boeger, S. C. S., 1803 Pleasant St., Knoxville, Iowa.

Andrew Brands, 4615 Southern Parkway, Louisville, Kentucky.

Clarence D. Chase, Chippewa National Forest, Cass Lake, Minnesota.

Russell D. Chipman, District Ranger, Sabine Purchase Unit, Sam Houston National Forest, San Augustine, Texas.


Raymond D. Garver, Forest Products Laboratory, Madison, Wisconsin.

Gerald Griswold, U. S. F. S., Oden, Arkansas.

John P. Hough, Hoodport District, Olympic National Forest, Hoodsp- ort, Wash.

Dave M. Ilich, 331 Giannini Hall, Berkeley, California.

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Leighton McCormick, 322 Federal Building, Jackson, Tennessee.

Harold C. Moser, 1104 Post Office Building, St. Paul, Minnesota.
THE 1936 AMES FORESTER

Harrod Newland, Kentucky Forest Service, Arlington Heights, Kentucky.
F. T. Priester, Asst. Regional Forester, U. S. Park Service, Keeline Building, Omaha, Nebraska.
Lloyd Roche, Technical Foreman, S. C. S., Kahoka, Missouri.
Clyde T. Smith, State Forest Service, Wisconsin Rapids, Wisconsin.
Karl Thielking, U. S. F. S., Russellville, Arkansas.
George Unser, C. C. C. Camp, Ractola, South Dakota.
Kurt Ziebarth, Department of Forestry, State College, Pennsylvania.

1932

Helmer Anderson, Junior Forester, Isabella Ranger Station, Finland, Minnesota.
Harold S. Coons, Junior Forester, Glidden, Wisconsin.
Edsko J. Dyksterhuis, Asst. Range Examiner; Carson National Forest, Taos, New Mexico.
Gordon Gray, Forest Ranger, White Mountain District, Lincoln National Forest, Capitan, New Mexico.
Wendell H. Harmon, Poctola Side Camp, Poctola, South Dakota.
George Kline, Lone Tree, Iowa.
Ewart D. Potter, U. S. F. S., P. O. Box 727, Leesville, Louisiana.
Charles Mandeth Swanson, U. S. F. S., Technical Foreman, Grand Marais, Minn.

1933

Clarence E. Anderson, 115 Rutledge Avenue, Charleston, South Carolina.
Lawrence Gibson, 1143 Cole Boulevard, Portsmouth, Ohio.
Fred W. Gottschalk, Indian E. C. W., Box 677, Albuquerque, New Mexico.
Edwin Henry Grau, Forester, Burlington Land & Timber Co.; 307 South Garfield Avenue, Burlington, Iowa.
Eugene Hart, 632 Forest Avenue, Ann Arbor, Michigan.
Jacob Jouch, Forest Ranger, Alpine District, Uncompahgre National Forest, Delta, Colorado.
Andrew L. McComb, Department of Forestry, Iowa State College, Ames, Iowa.
Earl Franklin Olson, Forestry Division, Tennessee Valley Authority, Knoxville, Tennessee.
Nicholas Ponomareff, Dept. of Plant Pathology, University of Arizona, Tucson, Arizona.
Ivan Sack, U. S. F. S., Weaversville, California.
Hugh Steavenson, Nurseryman, S. C. S., Ellsberry, Missouri.
Wendell E. Stone, Camp F-7, New Augusta, Mississippi.

1934

Fred C. Battell, S. C. S., Lisbon, Ohio.
Barney Campbell, S. C. S., Eldora, Iowa.
Lyle W. Chisholm, Junior Forester, Consolidated Chippewa Indian Agency, Cass Lake, Minnesota.
Wm. A. Duerr, Junior Forester, Lake States Experiment Station; 1104 New Federal Building, St. Paul, Minnesota.

W. L. Hatch, U. S. F. S., Williamsville, Missouri.

R. W. Hess, Yale University; 699 Forest Road, New Haven, Connecticut.


O. M. Johnson, Junior Forester, Salem, Missouri.

Arthur Lehman, Lake States Forest Experiment Station, University Farm, St. Paul, Minnesota.

Jack Newville, Camp Superintendent, F-32, Mack, Minnesota.

H. W. Richman, Lake States Forest Experiment Station, University Farm, St. Paul, Minnesota.

G. M. Schroeder, Camp F-8, Winona, Missouri.


Chas. H. Tustison, Forest Products Laboratory, Madison, Wisconsin.

1935

Jack Beyer, 1419 Capitol Building, Des Moines, Iowa.


Dwight L. Dannen, 1310 North 25th Street, St. Joseph, Missouri.

E. S. Downey, Asst. Forester, Texas Forest Service, College Station, Texas.

Howard Harlan, U. S. F. S., Great Bend, Kansas.

Ralph R. Harvey, Asst. Forester, S. C. S., 1922 1st Avenue, N. E., Cedar Rapids, Iowa.

Donald Hodges, Junior Forester, U. S. F. S., Childress, Texas.

Stanley Hurd, Junior Forester, U. S. F. S., Ava, Missouri.


Paul Libby, S. C. S., Russellville, Kentucky.

Dorsey J. Morris, Camp Union, F-10, Jonesboro, Illinois.

Paul M. Muller, S. C. S., Camp 3, Hartford, Kentucky.

Oliver Olson, U. S. F. S., Berryman, Missouri.


W. R. Rottman, Forester, Resettlement Administration, Madison, Wisconsin.

Gail Thomas, Corvallis, Oregon.

E. H. Vanden Oever, Pella, Iowa.

Ex-Students

Lee J. Cronin, Sibley, Iowa.
Donald E. Cox, Junior Forester, Camp Sheep Ranch, Phillips, Wisconsin.
P. M. Garrison, Great Southern Lumber Co., Bogalusa, Louisiana.
Thomas Hurt, Junior Forester, Lynchburg, Missouri.
Allan Mollison, Forestry Branch, Indian Service, 643 Plymouth Building, Minneapolis, Minnesota.
O. W. Oja, Huntington Forest, Newcombe, N. Y.
H. S. Palmer, Box 127, Holbrook, Arizona.
Alfred Pinne, Supt. ECW Camp 76-S, Ferdinand State Forest, Ferdinand, Indiana.
Martin A. Schoeneman, U. S. F. S., Box 178, Laramie, Wyoming.
H. F. Wilcox, Box 74, Greenville, California.
W. R. Yeager, 638 Lee Street, S. W., Atlanta, Georgia.

Six Whistles

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By Rona Elizabeth Workman

Six whistles, six again—the fatal call
Which makes each man within the sound of it
Wipe the sweat from his eyes and with a
strange chill at his heart,
Ask “What poor devil got it now?”
How quickly the name is whispered through the woods,
As if each bit of shining cable passed it on,
“It’s Bill, poor cuss—a wife and children, too
Well, that’s the first this month. I wonder who goes next,”
And each man, as the stretcher born by gentle hands
Is lifted into place upon the car,
Watches and wonders if Fate has marked his name
Upon the dice she soon will roll again.
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Freeman Cook was recently discussing with Professor Larsen the disconcerting condition into which this old world rapidly was sinking. "What is going to become of our American home life?" Cook inquired. "What are we going to do to keep from being utterly depopulated? What are we going to do to maintain families? Why, do you realize that most of the girls going to this college don't want to marry?"
"Don't want to marry?" exclaimed Professor Larsen. "How do you know?"
"Know," repeated Cook seriously. "Know! Why, man, I have proposed to nine of them already this year."
Lewis Kirby Ferguson: “Is this the Weather Bureau?”
Voice: “Yes.”
Lewis Kirby Ferguson: “How about a shower tonight?”
Voice: “It’s all right with me, take it if you need it.”

WAITING FOR NOVEMBER, 1936—

A SEATTLE boy writes the Pathfinder as follows: With the intention of giving my uncle a handsome birthday gift I wrote him for a little money, not letting on of course that it was to be used in buying him a present. I was about knocked flat when he replied:—“In response to your request it is imposible for me to send you any money just now. My present financial condition is due to the effects of federal laws, state laws, county laws, corporation laws, by-laws, brother-in-laws, mother-in-laws, and outlaws. Through the various laws I have been held down, held up, walked on, sat on, flattened out and squeezed until I don’t know where I am, who I am, what I am, or why I am. Those laws compel me to pay a merchant tax, capital stock tax, income tax, real estate tax, auto tax, gas tax, water tax, light tax, street tax, school tax, syntax and carpet tax. The government has so governed my business that I do not know who owns it. I am suspected, inspected, disrespected, examined, re-examined, until all I know is that I am supplicated for money for every need, desire and hope of the human race, and because I refuse to fall and go on relief or go out and beg, borrow or steal money to give away, I am cussed, discussed, boycotted, talked about, lied about, held up, held down and robbed, until I am nearly ruined, so the only reason I am clinging to life is to see who in blazes is going to be elected in November, 1936.”—Pathfinder.
THE TIMBERMAN
AN INTERNATIONAL LUMBER JOURNAL
623 S. W. OAK STREET
PORTLAND, OREGON

Specializing in the publication of technical,
permanently valuable articles on
LOGGING
LUMBER MANUFACTURE
LUMBER UTILIZATION
FORESTRY
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AN AID IN SCHOOL
AN AID IN AFTER LIFE
GET THE HABIT EARLY!
Sinister-looking individual (significantly): “Is yer 'usband at 'ome, Ma'am?”
Mrs. Amos S. (resourcefully): “Well, if he's finished his revolver prac-
tice, he'll be playing in the back garden with our bloodhounds. Did you
want to see him?”

Andy (going over the afternoon work with the planting class): “What
does this label mean—'Wait and see'?”
Heyer: “Well, I forgot just what I planted there, sir.”
YOUR SLEEPING ROBE

Can It Pass These Tests?

Can it keep you as comfortably warm in the woods as you sleep at home? . . . Fit an ordinary packsack? . . . Weigh less than two 4-pt. blankets? . . .

SURE!—if it's a

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For 30 years the North's best buy in camp bedding. The original ready-made "eiderdown." Snaps or zipper fastening, making a draft-proof, roomy, delightfully soft, light and cozy bag. Dry, hygienic, windproof, showerproof.

No padded stiffness. Good for years. Choice of six, $16.50 to $62.50. Styles insulated with pure wool batt $16.75, $25.00. At your Dealer's or direct—no extra shipping charge in U. S. A. FREE CATALOG.

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EDGERTON
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Downtown Ames

Hans (rushing into the office after hours): "Where are all the nice girls this evening?"

Mrs. Walter: "Out with the handsome men."

Clark was all swelled with pride. "Congratulate me," he said to a friend.

"I did congratulate you," replied the friend, "when your triplets were born."

"No," returned Clark, "I mean congratulate me on my promotion."

"Oh, have you been promoted?"

"Sure," replied Clark.

"How come? How did you manage it?"

"Told the boss I was the father of triplets."

"And what did your boss do?"

"He made me the head of the production department."

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Archives—Where Noah kept his bees.
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College-bred—A four-year loaf, made with father’s dough.
Compliments—Lies in full-dress.
Darwin—The man who made a monkey out of Adam.
Etc.—The sign used to make people think you know more than you do.
Pedestrian—A man who has two cars, a wife and a daughter.
Research—Getting things out of many old books never read, and putting them into a new book which nobody is going to read.
Social Tact—Making people feel at home when you wish they were.—A Connotary, by Pollard.

LIFE BEGINS AT SIXTY-FIVE

Cheer up, grandpa, don’t you cry!
You’ll wear diamonds by and by.
Uncle Sam has money mills
Made to grind out brand new bills.
He will help you in your cause,
With his old-age pension laws.
No more worry over bills,
Butchers’ duns, or doctors’ pills.
No more panic over rent,
Leave that all to Government.
Dine on squab and caviar,
Sport a streamline motor car.
When the blizzards bliz a bit,
Off to Palm Beach gayly flit.
Lead a life on pleasure bent,
But you must spend every cent!
Whooppee, grandpa! Stay alive!
Life begins at sixty-five!

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Have You an
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28 oz. forestry green fabric. Made
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Official monogram applied. Ap-
proved design. Order now—
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Enclosed find remittance for
$7.50. Send me postpaid stag coat
with following measurements.
2% tax in Iowa

Chest .......... inches. Sleeve
from center back over raised
bended elbow to wrist joint.......... inches. Length of coat desired
...... inches.

Sign: ................................................
Address: ........................................

Tilden Manufacturing Co.
Ames, Iowa

LETTER WRITER WANTS SAMPLE SHEEP

"Dear Sir:

I have received quite a bit of literature concerning Arizona and its
assets and I am thinking I would like to get into the sheep business. I
wonder if you have a sample sheep you could obtain for me? Even a
small one would be all right, as I will keep it in my office until I can put
it out and have it pasteurized. I would like a nice, medium-weight, all-
wool sheep in stripes if you can get it, one that I can skin and make a
Pendleton jacket out of later on. When you skin a sheep once, is that the
end of it, or can it be skinned regularly like a human being? I have an
old sheepskin in my office I have been living off of for twenty-seven
years and I thought if I had a whole sheep I might do better. I see in the
papers there is a lot of trouble about the tariff on wool, so if you can
pick out a sheep that hasn't any tariff on the wool, it might save me
cleaning it when it gets here. Another thing, don't send me a U sheep,
and I could not get one to my office very well if I couldn't make it turn.
because they have signs on the streets here that you can't make a U-turn;
—Coconino (N. F.) News.

Professor Thomson, seeing R. Verle Johnson carrying a big load of
"Ames Foresters" from the printer's to the top of Ag Hall, said:
"Don't all those magazines make you tired?"
"Naw, I don't read 'em," was the ready reply.

Snyder: "My dog is just like one of the family.'
Grau "Which one?"
German, addressing his dog:

"You vas only a dog, but I vish I vas you. Ven you go mit de bed in, you shust durn rund dree times und lay down. Ven I go mid der bed in, I haf to lock up der blace und vind der clock und put der cat oudt und undress myself, und my vife vakes up und scolds me. Den der baby cries und I haf to walk him up und down. Den maybe ven I shust go to sleep it's time to get up again. Ven you get up you shust scratch yourself couple of times und you vas up. I haf to light der fire und put der kettle on, shcrap mit my vife already, und maybe get some breakfast. You blay all day und haf blenty of fun. I vork all day und haf blenty trouble. Ven you die, you iss dead; ven I die, I haf to go somblace yet.—Selected.

Charles Genaux, Jr.: "Say, dad, that apple I just ate had a worm in it, and I ate, that, too."
Prof. Genaux: "What! Here, drink this water and wash it down."
Charles, Jr. (shaking his head): "Aw, let 'im walk down."

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A Far-reaching Influence

Under the direction of Iowa State foresters many millions of trees have been planted in this state during the last few years. Millions of these are entwining their roots around soil that soon would have served to clog the channels of the Missouri and Mississippi Rivers.

During the past year a half million trees from the college nursery have been planted in state parks. Many others have gone to replace shelter belts and wood lots.

Iowans will reap bountiful returns from the work of men trained in forestry at Iowa State, one of the first schools in the land to offer forestry courses.

And now the courses offered are being broadened to include training in supervision of wild life, forest economics and grazing in national forests. Details of the additional opportunities to specialize in forestry subjects are given elsewhere in this issue.