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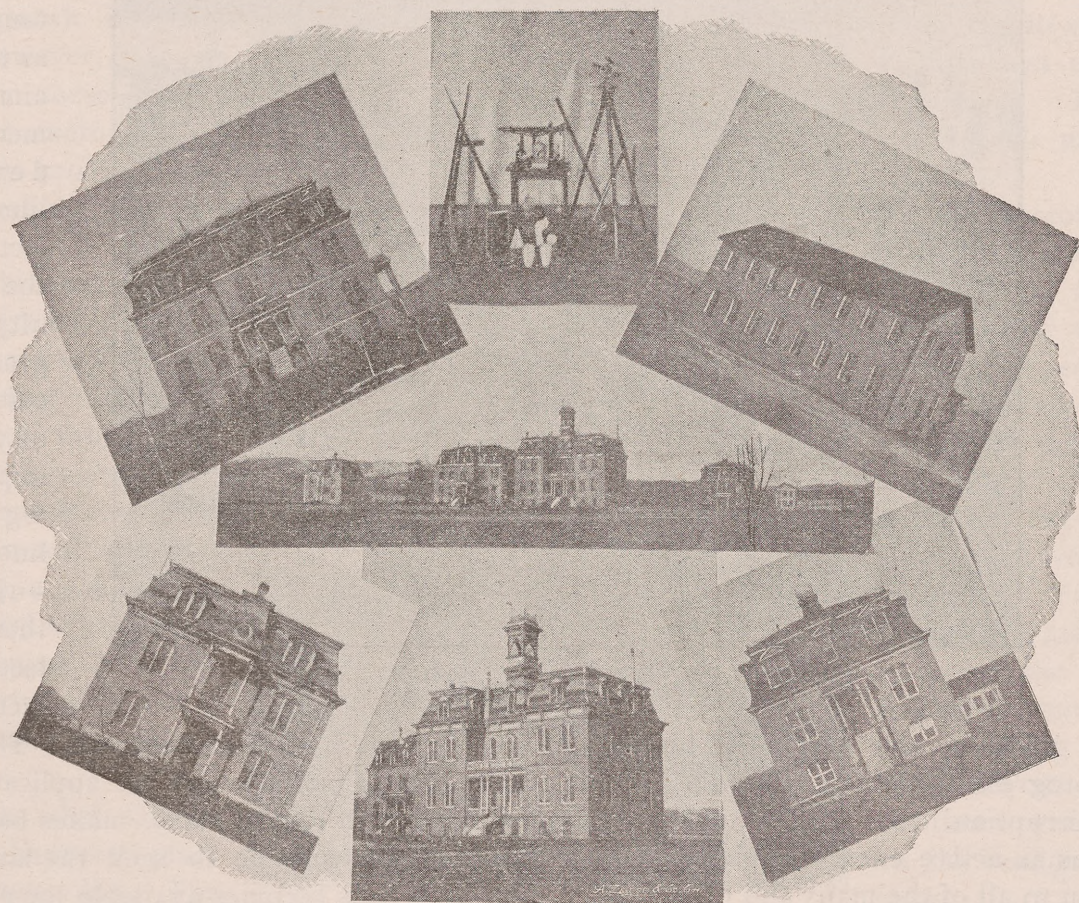
THE NEVADA STATE UNIVERSITY.

F. H. HILLMAN.

HERE was a time in the recent past when the Nevada State University had existence in little more than hopes and partially defined plans for the future. As such it found place in the minds of a few who realized the necessity of renewed activity in the

that the names of Senators Stewart and Nye stand out in bold relief in the early history of the institution when it owed its all to their energy and perseverance; and, that later, too, has the friendly hand of Senator Stewart been extended in needed aid of the school he helped to found.

During the eleven years of the University's location at Elko, it seemed powerless to extend its scope beyond that of a high school. It seemed to have fallen into a rut from which escape seemed impossible, and its friends almost despaired of attaining the object of their ambition.



BUILDINGS OF NEVADA STATE UNIVERSITY.

Dormitory.
State Mining Laboratory.

General View.
Main Building.

Iron and Carpenter Shops.
Agricultural Experiment Station.

interest of higher education in our State. The efforts of more than a decade to maintain a University had not proved successful; and, at the time of which this article first speaks, the future of the State University was shrouded in much doubt.

Limitation of space will not permit the writer to dwell upon the early history of the institution, as the purpose of the present article is to treat more particularly of the University in its present state of activity and usefulness, —of what it is to-day. It will suffice, therefore, to say

However, the closing of the school in 1885 aroused new interest in its welfare throughout the State, which resulted in its re-establishment at Reno in 1886.

The history of what may be termed the new university covers but the short period of eight years. Its progress during this time has been remarkable, however, and compares most favorably with that of any institution of its kind in the country established under similar circumstances.

There have been many obstacles to overcome. Along

with encouragements have come discouragements. Long studied plans have often come to naught. Hopes and ambitions have often given way to the power of circumstances; but, with unfailing courage, disappointments have been set aside in the acceptance of the inevitable. But that all has been to good purpose the condition of the University to-day attests.

The mid-winter of 1885-86 found a single building crowning the hill north of Reno selected as the site for the State University. Not a single tree or shrub broke the monotony of the surroundings. The snows of winter covered no campus, no symmetrical lawns or winding drives. They but intensified the loneliness of the apparent waste, and made more dreary the place soon to be brightened by the cheer and hopes of youthful hearts and minds.

With the lingering of the winter the University opened its doors to students for the first time in its new location. With a faculty of two members and a student roll of but twenty-five or thirty names, the first session was held in an unfinished, almost unfurnished, building. At the close of the year the faculty was excused and all school work suspended pending the completion of the building.

In September, 1887, the University was again opened under the presidency of LeRoy D. Brown, Ph.

D. With that date began a new era in its history. Since that time the progress of the institution has been rapid and without interruption.

President Brown was an active energetic pioneer who aimed to give attention to all of the many and diversified needs of the infant university. To his thoughtfulness and perseverance is due the establishment of departments and the inauguration of many features that have since outgrown, perhaps, the highest hopes, even, of their originator. Then it was not merely the question of meeting the immediate demands of the institution, but also that of preparing for an uncertain future. The uncertainties of patronage and financial support only added to the difficulties encountered in molding the present institution.

The presidency of the University was assumed by Stephen A. Jones, M. A., Ph. D., in January, 1890. Under his conservative management stability has characterized the recent improvements in the institution. President Jones spent three years in Germany, where he

devoted his time to the study of Classical Philology at the Universities of Münster and Bonn. While in Germany, and later in France, the systems of education of these countries received his especial consideration. As preparation for his work, President Jones has devoted much study to the Science of Education, both at home and abroad.

Each new year has brought increasing patronage. By judicious expenditures of the limited appropriations made by the State and the general government, the University has been enabled to make considerable increase in its teaching facilities by additions to its corps of instructors and in its equipment. This has permitted the maintenance of various departments that have wholly altered the educational character of the institution of a few years ago.

The industrial and the liberal arts rank equally in the

consideration they receive. Students are taught to *do* as well as to *know*. It is the aim in every department to give the student a working knowledge of the subject he takes. It is the policy of the faculty to prepare every graduate to meet successfully the demands of practical life. The impossibility of grasping the sum of human knowledge is thoroughly recognized, therefore, in the selected courses of study methodical training



A STUDENT'S DESK IN THE CHEMICAL LABORATORY.

receives first and best attention. The acquisition of a knowledge of methods and the applications of principles, combined with that of facts, makes harder work for the student than were he to seek the latter alone; but his education thus becomes available for practical use rather than an accumulation of disconnected materials. Thus it is that laboratory work prevails wherever it is practicable.

In the laboratories text-book facts and theories are verified by practical demonstration, not by the instructor alone, but by the students, each working for himself. The practical work of the various departments differs with the different natures of the departments. Throughout them all, however, there runs the same principle, that to do a thing insures an understanding of it; that right methods of doing things learned and applied in college will be practiced in after life. Indeed, it may be very safely asserted that the young lady who applies thought and good judgment in properly and neatly performing her laboratory work, will be guided

by the same principles in the office, the school-room or the household. The young man who makes a neat and durable joint in the carpenter-shop, will probably have his work after leaving college characterized in a similar manner.

It is believed that in this practical work a peculiar talent cannot place the student beyond the reach of good to come from such practice. Fortunately the natures of the different departments are too varied to admit of this. Inborn instinct for correctness, dispatch and neatness is cultivated. If not inborn, it is to a degree acquired before the student is prepared to graduate.

It will be seen that it is not the policy of the institution, necessarily, to make a chemist of every student who studies chemistry, or a doctor of every student who takes practical work in anatomy and physiology. If such is desired by the student, here are facilities for special and advanced work in these and other lines. However, in doing the work required in these departments, he acquires methods and habits that he may profitably apply in whatever calling he may assume.

Self-reliance, cultivated in the laboratories, is practiced by every student who does good work in the University. The effect of the individual responsibility thus placed upon each student is manifest in the student body considered as a unit. Social and moral improvement has come with a general elevation of the standard of reliability and usefulness. Labor is looked upon by the majority as a virtue which should command the respect of all.

It will be seen in what follows that a great change has taken place in the University since 1886. The single building of that year is now one of five. The two instructors then in charge are now replaced by twelve professors and four instructors. Instead of twenty-five or thirty students there are nearly 190 at the present time. Not only internal but external improvements have been made. A fairly complete system of daily and term routine has been established. College spirit has found a place in the student body. Students have been put upon their honor and few have been the departures from propriety. Indeed, the first case of hazing has yet to be experienced. Harmony has characterized these few years of growth in which the best promise for the future is to be found.

THE VARIOUS DEPARTMENTS DESCRIBED.

The strength of the University lies in the strength of its various departments. The head of each is especially interested in his department, and while there is unity and symmetry in them as a whole, each is indebted to its chief for its advancement and usefulness. In the faculty are represented graduates of universities at the extremes of the East and the West, and universities and colleges of intermediate States. Two have studied abroad. Thus various experiences have influenced the policy of the University management, and have been valuable in molding its character.

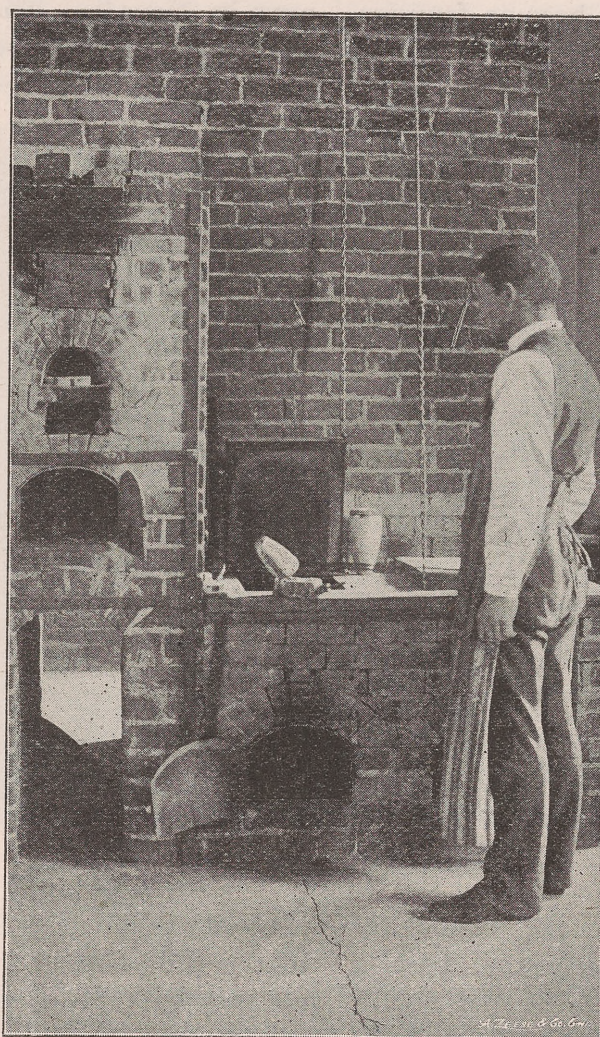
DEPARTMENT OF LATIN.

Professor J. E. Church, Jr., B. A., of the University of Michigan, has charge of this department. Professor Church is an enthusiastic and popular instructor who has the happy faculty of making his students see the best of reasons for taking his subject. The worth of the subject is their excuse for good class work.

The ideal toward which Professor Church aims in presenting Latin to his students is to make a living, useful thing of what is so often called a "dead language." His students study the language, not simply for the mental discipline in unraveling the mysteries of its grammar, but also for the culture that is derived from a study of its literature. To this end particular attention is given to sight reading, by which the student may read a sentence continuously, grasping the meaning as he progresses. Thus the student is placed in a position to gain easily and appreciate the beauties of the Latin literature.

Text-books and readers are not the only sources of education in this department, however. The student is placed in the environment of the authors through the medium of photographs of Roman people and antiquities. The department possesses nearly 300 of these, which embrace views of Roman architecture, paintings, sculpture, implements of peace and of war. Home life and surroundings are depicted in photographs of excavations at Pompeii. In contrast to these are many photographs of modern Italy.

Thus it is that the student is brought as nearly as may be into the life and activity of the Romans while he studies their writings. He studies a people in all the phases of its high civilization, while he ponders over



A FURNACE IN THE MINING DEPARTMENT.

what is so often termed the "dry bones" of a Latin reader.

DEPARTMENT OF CHEMISTRY AND PHYSICS.

Professor J. W. Phillips has charge of these two closely allied branches. Each of the University schools and the Normal school, are represented in the various courses presented in chemistry. An elementary course is presented to the Normal School students in their last year. The instruction in this course embodies work in the text-book, supplemented by notes taken in the class. Experiments are performed and explained in class. Considerable time is devoted to the writing of chemical reactions and the solution of problems in chemistry. The Normal students may, if they so elect, take a course in the chemical laboratory, where they become familiar with various chemical manipulations.

The courses pursued by the students in the School of Agriculture and Mechanic Arts are more comprehensive. A course in advanced theoretical chemistry is followed by a course in qualitative analysis, by which the student becomes acquainted with the methods of analysis of inorganic substances. This course is sufficiently comprehensive and complete to give the student confidence in the reliability of his work. Students from the School of Mines take a course in theoretical chemistry, then a course in quantitative chemistry, selected with reference to its applicability to the mining industry.

The Liberals Arts students become acquainted with the theories of chemistry in the class room; and, if they wish, a laboratory course may be devoted to the study of chemical reactions and the use of chemical apparatus.

It will be seen that the courses in chemistry are pursued by a large number of students. To meet the demand there are two well equipped laboratories. Each has a private laboratory, store rooms and a balance room attached. Each student is responsible for the apparatus he uses, which he keeps in a private locker.

Such is the work in progress the present year. The experimental chemistry is popular and gives the students a good view of the field of chemistry. Much of the work is technical and bears directly upon questions of utmost

importance in the arts, sciences and trades.

The courses in Physics are elementary and advanced. The former course is presented to the Normal School students in the class room, with laboratory practice optional. The advanced course is required of students in the University courses.

A well lighted room is devoted exclusively to experimental work in physics. It is fitted with heavy tables and supplied with apparatus for the demonstration of a large part of the phenomena treated in the text-books.

DEPARTMENT OF MINING AND METALLURGY.

Professor R. D. Jackson is in charge of this department which relates to mining, that industry so prominent in Nevada. The department was represented in the work of the University before its establishment at Reno, but the more recent years have seen the greatest progress in the development of its educational facilities.

The instruction in this department is thoroughly technical, relating to the theoretic and practical problems in mining in its various branches. The purpose of the department is to equip its students for successful work in the higher and broader fields of the mining industry. The

necessity of much practice work, so easily seen, is met in the provision of a large amount of laboratory work relating to the various branches of the subject. Text-books are replaced by lecture notes by the professor.

A term is devoted to general metallurgy relating to fuel, furnaces, refractory materials and alloys. While the student becomes familiar with methods of treatment of ores in general, certain of the more important ores receive especial attention. Thus iron, copper and lead, with reference to their preparation, methods of smelting and the calculation of furnace charges, receive a term's work. A term is devoted to the milling of silver ores, in which the standard processes are studied and demonstrated. Another is devoted to gold and mercury, in respect to the milling of various gold-bearing ores and the extraction of mercury.

In mineralogy the student becomes familiar with the general properties of minerals by blow-pipe analysis. His course in the determination of minerals familiarizes



CLASS ROOM IN THE COMMERCIAL DEPARTMENT.

him with their special characteristics, uses and occurrence. It is to be understood that in this work the student studies samples of various ores, thus studying in the laboratory as he would work in the field.

In mining proper, two courses are presented, one relating to ore deposits, explosives and excavations, the other considering prospecting, exploration, drainage, ventilation and mining machinery.

The department is equipped for doing practical work in the above subjects. The recent establishment of the State Mining Laboratory has done much to promote activity in the mining department. There has just been completed, almost wholly by student labor, a stamp mill having a crushing capacity of a ton and a half of ore each twenty-four hours. Its equipment embraces a concentrator, amalgamating plates for the extraction of fine gold, two small pans and a settler for pan amalgamation, also a leaching plant.

The ores worked in the course in practical metallurgy are purchased by Professor Jackson upon his own personal responsibility and eventually paid for by the proceeds of their milling.

A smelter in process of construction will soon be added to the present equipment of the department. This will permit the working of various ores dependent upon this process.

At the present time active work is in progress at the mill and furnaces. The necessity of occasional night shift work shows the manner in which the students in this department meet its demands.

Gold mining and reduction has of late received more attention from students than that of silver, owing to the limited demand for specialists in silver mining, the result of the depression in silver.

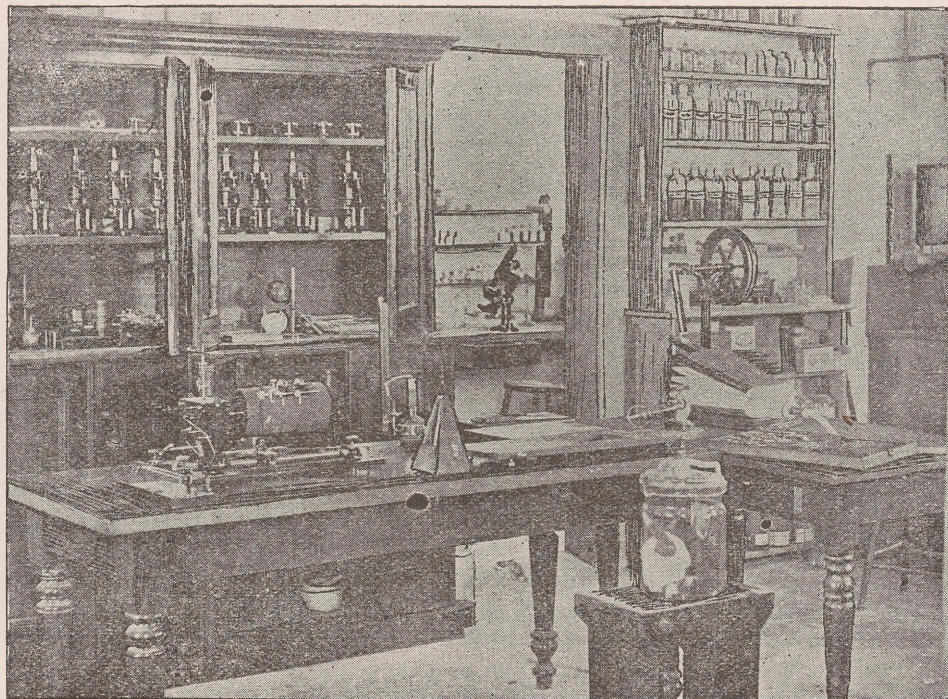
DEPARTMENT OF MECHANICS AND MECHANICAL DRAUGHTING.

This department is one of the more recently established and is presided over by Professor Henry Thurtell. Its courses of instruction are open to regular students in the Schools of Mines, and Agriculture and Mechanic Arts. The work is so selected as to be of greatest practical use to the student of these schools and yet is sufficiently com-

prehensive to be of service in a more liberal application in the mechanic arts. These subjects are the objects of Professor Thurtell's especial study, and his students reap the benefit of association with a specialist whose enthusiasm leads them to work for the worth of the subject rather than simply to "get through." Original research in an art or science associated with its presentation to students not only adds to the sum of knowledge in the subject, but it makes this a living progressive thing to its student followers.

In the student's introduction to mechanics, he considers the fundamental conceptions of mechanics, conditions of equilibrium, determination of the center of gravity of objects of various forms, the nature of frictions, rectilinear and curvilinear motions, work and energy, and many other subjects relative to the laws upon which the actions and construction of machinery are based.

In the study of hydraulics, the equilibrium, pressure and resistance of liquids is considered and the applications of liquids and gases in mechanical economy are studied. Another branch of the subject treats of the strength of materials, which includes the discussion of the strains upon various mechanical structures, as bridges, roof trusses and arches. To the foregoing is added a course relating to the steam engine in respect



A CORNER IN THE PHYSIOLOGICAL LABORATORY.

to its structure and the relations of its parts.

Mechanical draughting is taught in a well lighted room fitted with substantial drawing desks and other apparatus relating to the delineation of mechanical objects. The student provides himself with a part of the tools employed in drawing. The drawings are made from measurements, and mathematical calculations based upon theoretic relations of the parts of a structure one to another. Among the subjects studied are included projections of solids, intersections of surfaces, isometric, perspective and machine drawing. Especial attention is given to the construction of drawings for working purposes in the carpenter and iron shops. At the present time drawings of the parts of a steam engine are being made from which students in the carpenter shop are constructing patterns for the moulding of castings.

Professor Thurtell has made a unique addition to his

teaching equipment in mechanics in the construction of a set of frames by which the development of curved lines and surfaces is illustrated by ropes of various colors. Each of these is drawn taut and therefore represents in itself a straight line, but considered in connection with the others is found to contribute to a curved line or surface. He is thus enabled to present to his students a graphic illustration of what in mental conception becomes most difficult and, at the best, unsatisfactory.

Professor Thurtell has charge also of the work in surveying. In addition to the text work, an afternoon devoted to field practice with instruments occurs once a week. In this work the students each in turn become familiar with the use of the various surveying instruments. The students of the School of Mines devote a year to this study and those of the School of Agriculture and Mechanic Arts two terms. The students become proficient in land, mining and railroad surveying by performing practical problems in land surveying, leveling and laying out railroad curves. Some practical work in tunneling and mining surveying is planned for the present year. The equipment of the department includes a transit, several compasses including one presented to the University by the late Mr. D. Barker of Reno, also levels, a plane table and much other accompanying apparatus.

The work done in surveying is thoroughly accurate and practical in every way.

DEPARTMENT OF ENGLISH AND HISTORY.

Of all the departments of the University none has been more needed than this, and none has a more worthy work to do. The division of English, especially, supplies a long felt want in providing every student in the University with more or less instruction in the use of his mother tongue. The majority of candidates for admission to the University seem peculiarly in need of instruction in English. In behalf of this demand no pains has been spared by Professor T. W. Cowgill, who has charge of this department, to make the work as thorough and complete as the prevailing conditions would permit. Professor Cowgill has so adjusted the course in English that it is progressive in nature and exceedingly available to students. The course ranges from

English grammar to advanced studies in English literature. The applications of the principles of grammar and rhetoric are embodied in a course in English Composition which extends throughout the year. Four distinct courses in English Literature are presented. The studies in this subject are directed toward an understanding of the language and style of the various standard writers. A practical understanding of the English language and its use is the aim of the work in this department.

The work in history embraces a course in United States history, one in constitutional and political history of the United States, and a third course in general history which is elective in the School of Liberal Arts.

THE COMMERCIAL DEPARTMENT.

Professor Robert Lewers is the principal of this department, which is the basis of the Commercial School.

Since taking charge of the department in 1891, Professor Lewers has established many important improvements. His class-room is equipped with departments for carrying on actual practice work illustrating the various branches of office business. To meet the modern requirements upon the business clerk, the students are trained in stenography, type

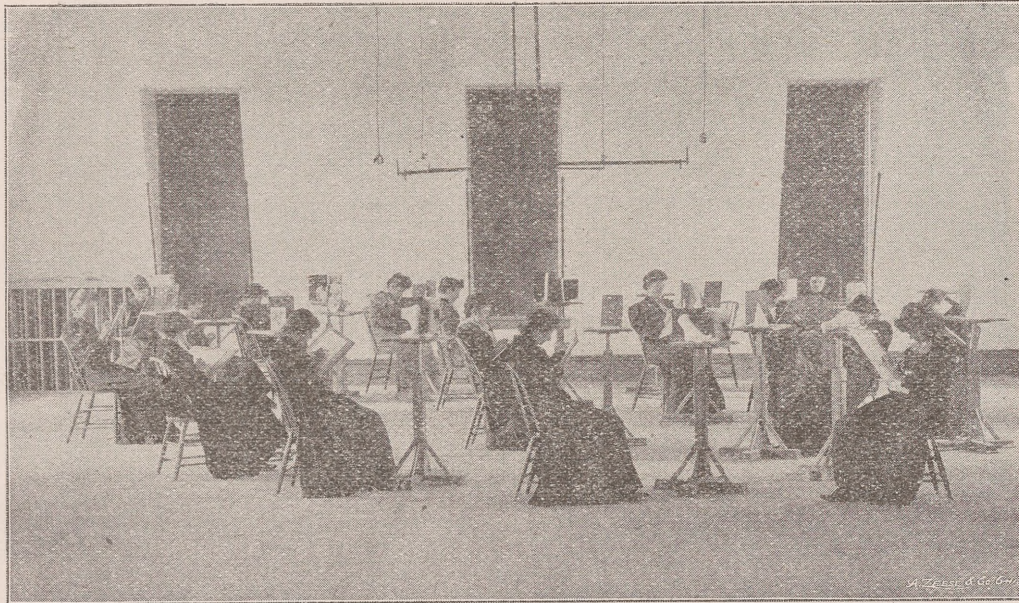
writing and telegraphy. In stenography a fairly rapid commercial speed is required. Work upon the typewriter done for the University by students, has demonstrated the proficiency of Professor Lewers' students in this branch. Several sets of telegraphic instruments are used by those students taking telegraphy.

The courses in bookkeeping are several in number and are very complete. The purpose of an extended study of bookkeeping is to give the student sufficient practice to insure reliable work and give him reasonable confidence in his abilities.

The department of Political Science is also in charge of Professor Lewers.

DEPARTMENT OF ANATOMY, PHYSIOLOGY AND GEOLOGY.

This department, to which is added the subject of zoology, is in charge of Professor W. McN. Miller. He has been associated with the department over six years, during which time there has been constant pro-



THE CLASS IN FREE HAND DRAWING.

gression in the improvement of the department's teaching facilities. The result is that this is one of the most thoroughly equipped of the departments of the University. It is the aim of the department to aid in overcoming the present native tendency to depreciate the value of the practical demonstration of the structures in human and comparative anatomy, and the laws of hygiene. Professor Miller has been stimulated in the work of broadening the character of his department by the recent activity in similar departments in the more progressive of our colleges, and elsewhere. The importance of the study of the nature and care of the human body has come to be very generally recognized among progressive educators. This has resulted in the compulsory teaching of physiology in many states; the introduction of comprehensive laboratory work in physiology and hygiene in the leading colleges and universities; and the introduction of physical culture which has placed the properly conducted gymnasium among the most important departments of the college curriculum.

A course in anatomy, physiology and hygiene is presented to the students of the Normal School. Lecture and text work is augmented by demonstrations in the class room by the professor in charge. Hygienic precautions to be observed in the class room receive especial consideration from the students in this course.

These students may, if they wish, take a term's work in the laboratory, where they study the human skeleton, take part in the dissection of the cat, use the compound microscope in the study of animal tissues, and perform experiments in chemical and physical physiology.

In animal biology, the student becomes acquainted with comparative anatomy through the dissection of various domestic animals; he studies the composition of the tissues of the body, and with the compound microscope he studies typical examples of the minute structure of the various organs.

It may be stated, in this connection, that the department is prepared to provide especial laboratory practice to advanced students preparing for the study of medicine.

In zoology, a general view of the animal kingdom is presented, after which the student makes an exhaustive study of the anatomy of a few typical animals. Within

the present term the class in zoology has made a systematic study of the development of the chicken by observations upon the young chick at various stages of incubation. Such a study exhaustively pursued, gives the student a general view of the early development in animals, also a clew to their natural classification. He learns a little of facts and much of the way other facts may be gained.

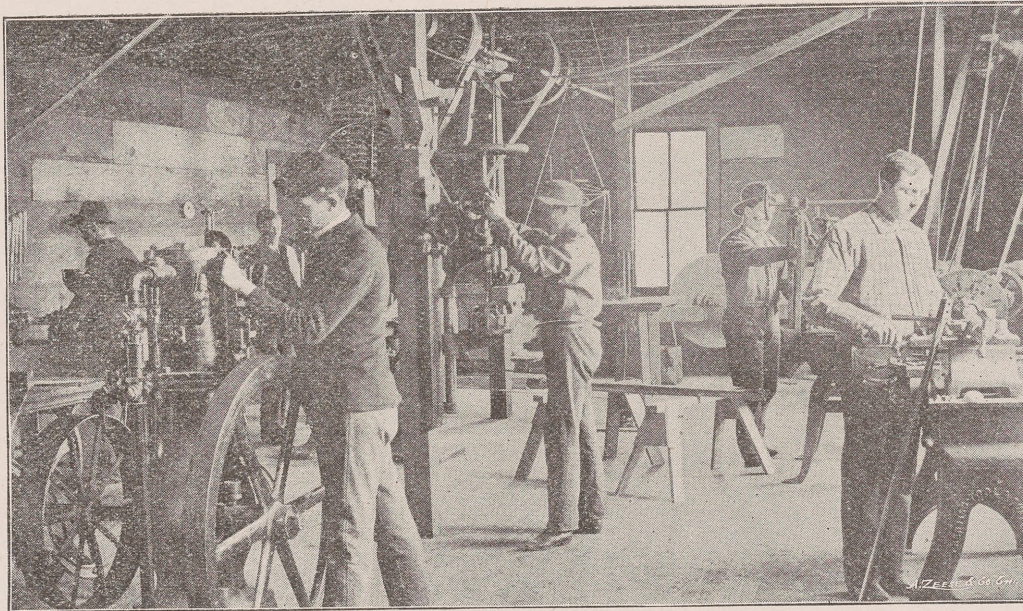
Professor Miller meets students from all the university schools, and the Normal School in geology. Lecture and text work is supplemented by studies of representative rocks, with which the department is well supplied. The geological formations exhibited at Virginia City, Pyramid Lake and Steamboat Springs are studied to some extent.

The general geological and zoological museum is under the curatorship of Professor Miller.

DEPARTMENT OF ENTOMOLOGY AND BOTANY.

This department is represented in both the University and Agricultural Experiment Station and is in charge of the writer.

Students from the School of Agriculture and Mechanic Arts devote a term to the study of entomology. The instruction is presented in a course of lectures relating to insects in general and those injurious and beneficial to man



STUDENTS WORKING IN THE IRON SHOP.

in particular. A part of the time is spent in dissecting a few typical insects, which explains clearly to the student the leading characteristics of their habits and the basis of their classification. He collects, properly mounts and classifies a few insects representative of the various groups.

The subject of botany occurs in the courses of the School of Liberal Arts and the Normal School. Students from the Normal School devote a term to the study of the microscopic structure of plants, or plant histology, and a second term to the study of typical plant structures, gross anatomy and the study of the plants of the local flora. This second term's work is pursued by the Juniors of the School of Liberal Arts.

The local flora has been quite thoroughly studied by the writer who has in preparation a descriptive catalogue of the plants of this portion of Nevada. This is to enable students to study systematically, and properly classify the plants of a restricted locality. A manuscript

abridged copy of this catalogue will be used the present year.

In the study of plant histology, each student is provided with a compound microscope and accessories. The student provides himself with other articles and reference books required. At the present time sixteen students meet in the well lighted class room furnished with tables for individual work. Each student is provided with material from which he prepares specimens for study. With these specimens he demonstrates the text and illustrations of the reference book. Carefully prepared drawings are made of objects as they are studied. This work affords the student a very fair understanding of the minute structure of plants and the physiological activity carried on within them.

In all this work the student, when provided with the working material and instructed as to how to proceed, is required to prepare his own objects for study. This plan is followed in view of the belief that true teaching should equip students for self-help in study rather than tend to an accumulation of facts simply.

Throughout the courses in botany the study of objects precedes the use of the text-book, whose contents is verified by such study.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

This department is in charge of a commissioned officer of the U. S. Army. Officers are detailed by the War Department to many of the colleges and universities of the various States. The period of the detail is four years, at the close of which they return to their regiments to be replaced by other officers. First Lieutenant A. C. Ducat, Jr., Twenty-fourth U. S. Infantry who organized the cadet company at the University, was replaced by First Lieutenant J. M. Neall, Fourth U. S. Cavalry in 1890, who has had charge of the department to the present time. The present detail expires in November of the present year. Lieutenant Neall will complete his

four years at the University a little later than the present senior class, not, however, owing to deficiencies in his work. He will leave the cadet company in excellent condition with many of the young men truly military in their bearing, and all of them the better for the active training they have had.

The course of instruction embodies lectures and text work upon military tactics and various departments of military science. The practical instruction consists of daily exercise, the weather permitting, including company and batallion drills, signal drill, target practice, practice marches, guard duty and different military ceremonies. While the companies are usually under the command of commissioned student officers, all exercises are under the general supervision of the Commandant in person. Students become acquainted with camp life

during an encampment of a week upon the University parade ground which occurs in May. A competitive target practice is held each year. The military uniform worn by the cadets is selected by themselves by majority vote.

The equipment of rifles, etc., furnished by the government is sufficient to accommodate sixty-eight students. Equipment for

signal drill is sufficient for six students. The present commissioned cadet officers are: Captain, Charles Magill; First Lieutenant, F. C. Frey; Second Lieutenant, R. L. Osburn.

DEPARTMENT OF PEDAGOGICS.

This department deals distinctively with the theory and practice of teaching and is under the supervision of Mrs. Mary W. Emery, who is also principal of the Normal School. The courses in theoretical pedagogics embrace text work upon questions of recognized importance in the teacher's calling. A term is devoted to the history of education, in which the educations of various periods and countries are studied and compared. Practical work in teaching occurs in each of the three years of the Normal School. The work in teaching is progressive,



SPRAYING OF PARIS GREEN TO PREVENT INJURY BY THE APPLE WORM.

the student taking a single pupil in charge at first. While instruction is being given the student teacher studies the mental characteristics of the child and endeavors to meet any peculiarity these present by the methods of instruction employed. Later, the charge of classes in various subjects is assumed. In all the practice teaching it is Mrs. Emery's aim to allow full liberty to individualism in the student teacher; to develop natural faculties rather than establish new ones. In the more advanced practice the student bears the responsibility of giving instruction in certain branches. In giving instruction, especial attention is given to demonstrating the relation of laws to facts and of certain facts to others. Thus the student applies in teaching what he has learned in other departments, by enlarging upon facts relating to topics

DEPARTMENT OF PRACTICAL MECHANICS.

This is one of the youngest of the departments of the University, as it has been in operation but two years. It is, however, a valuable and popular adjunct to the institution. The department is in charge of Mr. Richard Brown, who is an energetic and enthusiastic instructor. It embraces two shops, for work in wood and iron, respectively. The young men who take the shop work are students from the School of Agriculture and Mechanic Arts, the School of Mines, or the Commercial School.

Assigned afternoons in each week are spent by each student in one or the other of these shops, as the portion of the course he is pursuing specifies. During his course in this branch he may become very proficient in the



TOBACCO FIELD, EXPERIMENT STATION FARM, SEASON OF 1892.

that occur in the pupil's lessons; e. g., an explanation of the reason for the difference in boiling points of water on the mountain top and at the sea level involves a discussion of water in the solid, liquid and gaseous states, the effect of heat and pressure upon these conditions, etc. In presenting this and other similar topics, the student is left to his own resources in the construction of illustrative apparatus and drawings. There is, in the case cited, no elaboration of the physical laws involved. The pupil has his attention called to a series of related facts and the student teacher has the experience of putting his knowledge to practical use in the school-room.

The practice teaching is under the general supervision of Mrs. Emery who is ably assisted by Misses Kate G. Bardenwerper and Estella B. Ede.

use of both wood- and iron-working tools. The instruction commences with the construction of various simple typical mechanical devices which gives the student practice in the use of the tools employed, also a knowledge of the constructive essentials necessary to good results in this work. This practice work is followed by the construction of articles of various natures selected with reference to the proficiency of the students in the use of tools. The system of having useful articles constructed so far as possible is an admirable one, inasmuch as a much greater interest in the work is maintained than would prevail were the work considered from an educational standpoint alone.

It is the policy of the University to have constructed in the shops by the students, such articles as are needed

in the various departments so far as the work can be done properly and economically. This results in a constant demand for student labor in this direction. As this demand is often greater than can be supplied in the time allotted to instruction, much extra work is afforded the more proficient students for which they are well paid.

Of the various articles recently constructed for department use, may be mentioned a book-case and an office desk, each of hard wood; several elaborate desks for use in mechanical draughting; also a set of object stands used in free-hand drawing, which appear in the illustration of the Free-hand Drawing class. General repairs throughout the institution are conducted by students from the mechanical department. The putting in position of the incandescent lamps in the recent introduction of electricity at the University, was performed by students from this department.

At the present time the students in the carpenter shop are engaged in making the patterns for molding the castings of a twenty horse-power steam engine. These are made from drawings and specifications made by students in the Mechanical Drawing department as practical work in machine draughting.

This department is well equipped for work of the nature of that carried on at present. In the carpenter shop each student has the exclusive use of a carpenter's bench. This is accompanied by a locker containing a very complete set of standard tools. In addition to the individual sets of tools, the students have the use of various machine saws, a shaper and turning lathe. The raw material furnished by the institution for wood working is mostly pine, but considerable work is done in the harder woods.

In the iron shop the student has the use of a variety of iron-working tools and machines, including the lathe, planer, drills, etc. He also does work at the forge and anvil. At present the castings for a small steam engine are being finished by the students. Facilities for molding will soon be completed. The engines of the Mechanical and Mining departments are under the management of students from the iron shops.

THE VARIOUS UNIVERSITY SCHOOLS.

The several schools are characterized by the departments they embrace. They represent the courses of study, each leading to a degree or diploma, from which the student may select according to his proficiency and choice. Those of the University proper are: The School of Liberal Arts, the School of Agriculture and Mechanic Arts and the School of Mines, the first leading to the degree of Bachelor of Arts, the others leading to the degree of Bachelor of Science respectively. Each of these schools requires four years for its completion, unless advanced standing is assumed by the student on entering. There are located at the University, also, the State Normal School and the School of Business; the former embracing a course of three years, the latter requiring two years for the completion of its course.

The School of Liberal Arts is in no sense technical, but is designed to provide its students with such knowledge as forms the foundation of a liberal education. Languages, mathematics, natural science, history, political and military science are the leading general subjects in this course.

The School of Agriculture and Mechanic Arts has as its purpose the fitting of students for the industrial callings related to agriculture and the mechanic arts. The course of study is fairly general, but embodies such subjects as relate more particularly to the design of the school. A general education is augmented by thorough theoretic and practical work in the sciences and arts considered with reference to their industrial application.

The School of Mines is a technical school relating to mining in its various branches. In addition to training in the applied sciences, chemistry, mineralogy, geology and metallurgy, the student does work in mathematics, English, French or German, mechanical draughting and other branches.

The Normal School is designed to fit students for teaching in the public schools of Nevada. The various literary and scientific departments contribute to its course of study in which especial consideration is given to equipping students with such knowledge of these subjects as can be turned to practical use in the school-room. The department of Pedagogics forms the basis of the Normal School. Under this general head are embraced the history of education, methods in teaching, philosophy and science of education. The Normal School has its laboratory in a training school maintained in connection with it. The training school is attended by forty pupils, representing the primary, intermediate and grammar grades of the common school system.

The Commercial School admirably supplies the demand for a brief business course. A common school education is augmented by a thorough course in book-keeping extending through four terms. Stenography, typewriting and telegraphy, also related to the work of the modern business office, are taught and put in actual practice. Two years of French or German are embodied in the course of study, also two terms of political science. This school is popular and to many students has served as a stepping stone to one or another of the University schools.

THE AGRICULTURAL EXPERIMENT STATION.

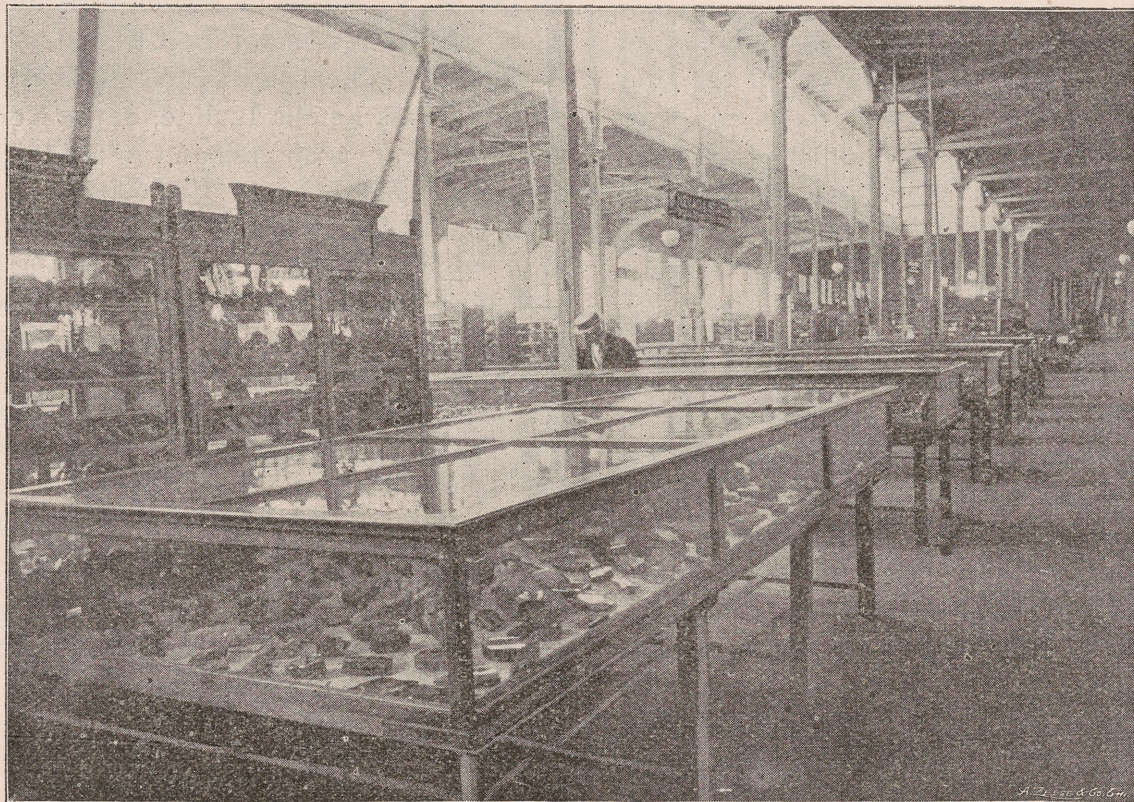
This is an institution distinctively separate from the University in its general nature and purpose. It is, however, located in part upon the University grounds and is under the immediate control of a director, the President of the University. The general management is in charge of the Board of University Regents. The station embraces a brick building of three floors located at the University, and an experiment farm of thirty acres situated one and a half miles from Reno. The station is one of fifty-one stations located in as many States and Territories. These are maintained by the general government, which

appropriates \$15,000 annually to each. The purpose of the stations, briefly stated, is to advance the interests of agriculture and allied subjects by investigating questions which it is impossible or impracticable for the practicing farmer to attempt to solve. The art of agriculture has not been revolutionized by the stations or is it likely to be so; however, they have done a grand work in advancing agricultural interests. Progressive farmers are beginning to recognize, understand and assist the laws of nature in their relation to the development and care of plants and animals. The stations and the farmers are working for the same ultimate end, but along different lines of action. Best results have followed the most active co-operation of farmers and stations.

Our own station has endeavored to keep apace with others by advancing certain lines of agriculture in Ne-

ing upon newly broken sagebrush land without irrigation resulted in a yield of ten to twelve bushels per acre with a growth of stalks of twenty to thirty inches in height. Experiments with corn indicate that a good yield is possible if early planting is followed, notwithstanding subsequent frosts. April planting has given best results. Sugar beets and tobacco have received much attention by both the Agriculturist and the Chemist.

Professor N. E. Wilson who has charge of the Department of Chemistry, has made exhaustive analyses of sugar beets raised on the station farm and at various localities in the State. The results of these analyses show that Nevada beets have superior sugar producing qualities. It seems evident from the investigations pursued, that were the facilities for sugar manufacture at hand, the cultivation of the sugar beet might be made a



NEVADA'S MINERAL EXHIBIT AT THE WORLD'S FAIR.

vada. Matters relating to general agriculture have been considered in the departments of agriculture, chemistry, entomology and botany.

Professor R. H. McDowell, who has charge of the Department of Agriculture, has in progress investigations upon various grains and other field and garden crops. Tests of varieties, periods of germination and conditions of irrigation have received especial attention. Professor McDowell has had under test twenty-eight varieties of wheat, sixty varieties of various grains and sixty-five varieties of potatoes. It has been stated by very good authority that the "Ruby" variety of wheat raised on the station farm is worth from 10 to 15 cents more per one hundred pounds than the varieties ordinarily grown in Nevada. Trials of varying numbers of irrigations are in progress. The experiment of wheat grow-

most profitable industry in Nevada. Among the analyses that have been made by Professor Wilson may be mentioned those of sorghum, milk and butter, fertilizers, insecticides and sanitary analyses of water.

A bulletin relating to the creamery industry issued by Professor N. E. Wilson has been most favorably received. A second edition was required to supply the demand, also a large number of copies were requested by the Maryland station for distribution in that State.

The Department of Entomology and Botany is in charge of the writer. The investigations in entomology have related to the general insect fauna of the State.

Results of observations upon injurious and beneficial insects have been published from time to time. Information relative to the destruction of insect pests has been disseminated so far as possible. Considerable work

has been done in demonstrating the utility of certain methods in destroying the apple worm. Great interest in the matter among apple producers has resulted. A series of bulletins upon Nevada weeds is being issued from the department at the present time. The collections of local insects and plants are quite complete.

Work in Bacteriology has been pursued in connection with the Experiment Station by Professor Miller. The investigations thus far have been confined, in the main, to the study of anthrax which is prevalent among horses and cattle in western Nevada. The station is equipped with a very complete set of bacteriological apparatus.

The bulletins from the Experiment Station are distributed free to farmers throughout the State. The station's work is for the people of the State and their co-operation is earnestly desired.

THE STATE MINING LABORATORY.

This is the three-story brick building designed by Professor R. D. Jackson, the superintendent of the laboratory. It was erected and is maintained by the State for the purpose of providing to the people of Nevada, free of expense, analyses of ores other than those of gold and silver. This was done in view of possible aid to the State arising from the development of its minor mineral resources. By this means, prospectors and others are relieved of the expense attending the examination and analysis of minerals discovered, which is often so great as to prevent analysis being made.

Professor Jackson aims to assist in the marketing of mineral products so far as possible.

THE LIBRARY.

The Library, which is located in the main building, embraces two rooms in direct communication, one devoted to the library proper, the other comprising the reading room. Among the 4,000 bound volumes are represented many of general interest, and others peculiar to the various departments. The histories of England and the United States are well represented. The works on poetry are numerous and well selected.

Of the more recent additions may be mentioned, *The Renaissance* by Symonds in seven volumes, the *Century Dictionary*, *Mathew Arnold's* and *Carlyle's* works, the Cambridge edition of *Shakespeare* in nine volumes, and *Old English Plays* in nine volumes.

Upon the tables of the reading room are numerous daily and weekly papers and various current magazines.

Miss H. K. Clapp, who has been closely identified with the University since its location at Reno, is the librarian.

PUBLIC LECTURES.

A general assembly of students and faculty occurs on each Friday afternoon in the assembly hall of the University. On these occasions a lecture is delivered by a member of the faculty or an invited guest. The subjects that have been discussed have been of general

interest to the university student. The Seniors in two of the University schools render their public rhetorical work for the year on these occasions.

In relation to public lectures, it is an unfortunate circumstance that the isolation of the University from the centers of educational activity, deprives students and faculty alike, of the benefits of frequent lectures and readings by prominent people.

GRADUATES

Of the University have been a credit to their institution. They are represented in the city and country schools of Nevada and in a number of schools in California. Some have taken up professional studies and others have returned to the University for post-graduate work. Several are acting as assistants at the University at the present time. Of these may be mentioned Mr. Frederick Stadtmuller, B. S., School of Agriculture and Mechanic Arts, 1892, who is Instructor in Chemistry and Physics, and Assistant in Chemistry in the Agricultural Experiment Station; Miss Estella B. Ede, of the Normal School, the same year, is an assistant in the training department of the Normal School; Mr. Charles P. Brown, B. S., School of Mines, 1893, is Assistant in Chemistry in the State Mining Laboratory; Mr. Hugh S. Swan, B. S., School of Mines, 1893, filled Mr. Stadtmuller's position as instructor for several months during the absence of the latter. The efficient work of these assistants has demonstrated that the faculty's faith in the graduates from these schools was not misplaced.

THE LITERARY SOCIETY.

The Adelphi Society is the only literary society maintained by the students. It is more prosperous at the present time than at any time in its history of two years. It has sixty members representing the young men and women of the various schools. Literary and social advancement is the object of the society which holds a meeting on each Friday evening.

The successful society performs a peculiar function in the college, which it benefits in many ways, and it is to be hoped that the Adelphi Society will ever be prominent as an individual factor in the improvement of the University.

EXPENSE OF ATTENDING THE UNIVERSITY.

While this is a matter largely dependent upon the individual student, there are a few necessary expenses to which all are subject. It is not so much what these are as it is how they compare in extent with the obligatory expenses at other institutions, and to what extent may the energetic student aid himself while pursuing his studies.

Table board in private families ranges from five to seven dollars per week; rooms from five to ten dollars per month. Table board is furnished at the University at four dollars and twenty cents per week. Dormitory accommodations are free to students. The demands

upon the student for dress are only such as are required by neatness and comfort. No social custom or class distinction demands more. It has been the policy of the Board of Regents to reduce the student's expenses to a minimum. No tuition is charged. No matriculation fee, which in other institutions ranges from five to twenty-five dollars, is charged. No established department fees are required which in several departments of other colleges range from two dollars and fifty cents to ten dollars per term. In some colleges the literary fund or some other fund is augmented by required contributions from students taking special or irregular examinations. None is asked here. The cost of books is not expensive considering the freight and express rates upon such.

In regard to facilities for living at the University, it is the policy of the authorities of the institution to provide boarding accommodations so far as possible for students of limited means. A part of one of the large buildings has sleeping and study accommodations for a number of lady students who are under the supervision of Miss H. K. Clapp. The present provision for living rooms for the young men is very meager. The Board of Regents is considering, at the present time, plans for a three story brick building to be used as a young men's dormitory. This will be erected as soon as the necessary means are provided.

Table board is provided at the college dining hall which is in charge of Mr. and Mrs. P. Howard. About forty regular boarders are accommodated at the present time. The board is excellent while neatness and system prevail at all times.

Furthermore, the Board of Regents pays twenty cents per hour for labor performed by students. Many avail themselves of the demand for work in the various departments and thus aid materially in reducing their expenses.

The writer trusts that the reader will realize that it is not the intent to place our University above others of its kind. Not so at all. Its limited age and advantages will not warrant this. However, no ideal picture has been drawn; indeed, much has been left unsaid. The University crowns our public school system and does it with credit. If it completes the education of some of its students, it does well; but if some seek further for higher work, it does better, for it has established a desire for that broader culture which gives us the best citizen, the best man and the best woman.

"What makes your lips so awful sore?"

Asked Sarah's cross eyed pap;

And Sarah to the old man said:

"It's caused by a small chap."

Then Sarah's youngest brother—

As yet unknown to fame—

Looked Sarah in the eye and asked:

"What is the small chap's name?"—*Ex.*

Reciprocities.

Stanford and the University of California will form an intercollegiate tennis club.

Two complete nines will be maintained at the University of Pennsylvania this spring.

Owing to a lack of advertising space, the *Daily Palo Alto* has been compelled to increase its size.

Twenty eight candidates are trying for positions on Brown's baseball team. Steere, short stop, captains the team.

The University of California and Stanford will hold an intercollegiate debate in San Francisco on or about the twentieth of April.

Hollister, last year's pitcher for Williams, will pitch for the U. of M. team this year. Casper Whitney ranks him next after Carter and Highlands among college pitchers.

The following is one of the rules adopted by the board of control of athletics in the U. M. No person shall play on any athletic team or compete in any athletic contest who is not a regular member of the University in good standing.

The regulations adopted by the committee of track athletics at the University of Pennsylvania if carried out cannot help securing them a good team. Three meets are to be held during the season, in March, April and May. Any man who reaches the standard set for that meet is eligible to the team, provided he trains properly.

Resolutions of Condolence.

WHEREAS, We learn with deep regret that God in his wise providence has called from earthly scenes our former fellow classmate, Stowe Sheriff; therefore, be it

Resolved, That we the class of '94 of the Nevada University, who have known him and affiliated with him in college work, extend to his bereaved parents and relatives our tender sympathies in their hour of great affliction.

CLASS OF '94, U. N.

RENO, Nevada, Feb. 16, 1894.

WHEREAS, A wise and loving Father has removed from her earthly home, our late beloved friend and schoolmate Edna McDowell. Be it

Resolved, That we, the members of the Normal Department of the State University, do tender our heartfelt sympathies to the bereaved family and relatives, in this their hour of deep affliction and beg them to believe that she they loved is not dead but sleeping. Be it further

Resolved, That a copy of this resolution shall be sent to the parents, the Reno press and the STUDENT RECORD.

MEMBERS OF THE NORMAL DEPARTMENT,
of the State University, Reno, Nevada.

THE STUDENT RECORD

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Editorial Comment.

OUR grateful thanks are extended Professors Hillman and Wilson, who have so generously aided in the preparation of much of the interesting matter that appears in the present number of the RECORD.

* * * *

THE RECORD is under obligations to Commissioner Yerington for the cuts used in this issue, beautifully illustrating some of the features of Nevada's exhibit at the World's Fair.

* * * *

THE present number of the RECORD is published with the hope of imparting a wider knowledge, than at present exists, of our University and the benefits that it is conferring upon the State. We are convinced, from recent interviews with persons from different parts of Nevada, that many are not aware of the splendid educational advantages offered by the University. Indeed, some are surprised when they see the fine buildings in which the college work is carried on. But the more important factors for the impartation of a thorough education are also to be found, and there are competent instructors and first-class apparatus. It is needless to say that each member of the Faculty is a specialist in his chosen field and takes rank among the leading educators of our country. A close acquaintance with the University will recall the fact that Nevada has an educational institution of which she may justly feel proud,

and one that is a great means of furthering her best interests.

* * * *

CLASS distinction in the past formed the leading role in college life, but gradually the old custom is losing its hold. Cane rushes are becoming less frequent and the Freshman approaches more boldly the sphere of the Senior. It may be well to modify the manner the upper classes have of showing their superiority, but when we remember that the college is no less important as a moulder of character than an imparter of general knowledge, an argument against a total obliteration of the lines of class distinction immediately suggests itself. The Freshman becomes characterized by an exaggerated opinion of his own ability and power and an o'er weening ambition to have bestowed upon him the honors of the school. Hold him in check and he will make a good Senior. Favor him and he will make an egotistic Senior.

The quiet reserve of the upper class men quickly brings the Freshman to a realization of his diminutiveness, thus imparting a valuable lesson that is essential to his success.

* * * *

NEVADA'S exhibit at the Midwinter Fair will surprise many who believe that our State is but a barren waste. Gradually its own people and those from afar are being taught the real worth of the Sagebrush State. While already having a reputation as a silver producing region, Nevada is to-day the first State in the union in variety and abundance of minerals. Its agricultural resources are gradually becoming known. Hay, grain and potatoes were for a long period supposed to be the only products adapted to its soil, but facts warrant the statement that every product grown in the North Temperate Zone thrives in Nevada. The development of these magnificent resources is but a question of time. While to-day the soil of its most fertile valleys only is tilled, each year will find more sagebrush replaced by waving fields of hay and grain. What Nevada's sixty-four millions of acres of land can produce is greatly under estimated.

What is needed to hasten the development of these latent resources? The remonetization of silver would no doubt serve more than anything else to stimulate the mining industry. The Legislature has offered inducements for the construction of another railroad through the State, which, if built, would at once induce a new era of prosperity. The construction of dams and reservoirs for the storage of the waters that now run to waste would cause the speedy development of the agricultural resources. Recognizing these facts, it needs not a prophet to tell that a time of unprecedented prosperity for Nevada is close at hand.

* * * *

F. R. Carpenter was called to his home in Paradise Valley on account of the death of his father.

Campus

The Board of Regents met on the first inst.

The Sophs. have commenced Descriptive Geometry.

The Junior Mines will begin Mining Surveying next term.

M. Ward and G. R. Bliss are visiting the Midwinter Fair.

Professor N. E. Wilson has returned from San Francisco.

A. M. Lewers, '92, spent a few days at the University last week.

The Misses Annie and Gertrude Martin are visiting in San Francisco.

Jerome Higgins is spending a week in San Francisco visiting the Fair.

The annual encampment of the Cadet Corps will be sometime in May.

The Senior Mines ran the quartz mill Friday and Saturday nights of last week.

Several important amendments to the constitution of the Adelphi have been made.

The members of the Geology class are contemplating a visit to the Comstock the coming vacation.

Miss Lillian Virgin of Genoa, and Miss Nellie Murphy of Empire, will spend the vacation at their homes.

The first game of a series between the Never Sweats and the T. H. P. O. nine will be played next Friday.

Professor Jackson delivered an address in Gold Hill the ninth inst., on matters pertaining to the University.

Professor McDowell will, next term, deliver a course of lectures on Agriculture before the Junior class in A. and M. A.

The classes of the University recently held meetings to make arrangements for the proper observance of Arbor Day.

Interesting experiments are being made in the State Mining Laboratory on paints that are the natural products of Nevada.

Professor Cowgill delivered a fine address the twenty-third ultimo, before General Assembly on America's Place in Literature.

To the Job Department of the *Journal* is due great credit for the neat typographical appearance of the present issue of the RECORD.

The address of Lieutenant Neall on the Battle of Saratoga, delivered before General Assembly on the second instant, was highly appreciated.

Mr. P. G. Kaburagi, a Japanese gentleman who recently graduated from the Northwestern University, paid the U. N. a visit this week.

F. J. Powers, ex, '95, and Miss Frankie Murdock were married at the home of the bride's parents in Modoc county, Cal., last Sunday.

The Emmitt Guard of Virginia City, has extended the Cadet Corps an invitation to attend their annual ball to be given on the sixteenth inst.

The proprietors of the *Virginia Enterprise* have presented the files of that paper to the Library. This is a very valuable collection extending over a period of twenty years.

F. C. Frey and H. E. Stewart spoke before General Assembly last Friday. Mr. Frey's subject was Napoleon's campaign in Italy in 1800, and Mr. Stewart delivered an oration on John Brown.

E. E. Hardache, who has been taking work in the Metallurgical Laboratory at the University, leaves in a few days for Johannesburg, South Africa, to take a position with the New Primrose Mining Company.

The University of Michigan has been offered the Ferrand and Votey pipe organ which delighted thousands of visitors at the Columbian Exposition. The organ which originally cost \$30,000 can be secured for \$15,000.

At the last meeting of the Adelphi the following officers were elected: President, S. C. Durkee; Vice President, Miss Lola Thoms; Secretary, Miss Maud Wheeler; Treasurer, W. J. Flood; Chorister, A. W. Ward; Marshall, R. W. Bassman.

An extemporaneous debate will hereafter form a part of each regular program of the Adelphi. The question discussed at the last meeting was, "Resolved that for the best interests of the State, the people of Nevada should not support either of the old parties."

Secretaries Lamont and Herbert have decided that there shall be no more contests at football between the cadets at Annapolis and West Point. This action is taken because of a conviction that the intercademic matches are detrimental to discipline and to the studies of the cadets. The order issued in the case of West Point is as follows:

"The game of football will be permitted at the United States Military Academy under such regulations as may now or hereafter be prescribed by the superintendent. He may permit teams from other institutions to visit West Point to play with the academy's team, but the team of cadets is prohibited from engaging in matches elsewhere."

As a similar order has been issued in the case of the Naval Academy, it is apparent that the two teams cannot meet again.—*Ex.*

SOME CHARACTERISTICS OF PARADISE LOST.

HAD Milton's poetry ended with *Lyudas* and the Sonnets he must still have ranked with the greatest English poets. In these earlier poems is shown a depth and beauty of thought, a grace and finish of style, not less exquisite than appears in the writings of Gray, Collins, and Coleridge, whose sole title to fame rests upon such excellences. The promise in the works of these poets remains unfulfilled. But while Milton's early poems made his fame secure, the beauties of *Il Peuseroso* and *Comus* were but glimmerings of the "Starry Splendor," which was to flame forth in *Paradise Lost*. Yet the greatness of *Paradise Lost* has not been

so universally admitted as has the excellence of the shorter poems. At first it was quite neglected, then thoroughly criticised, both favorably and unfavorably, and now it is generally admired at second hand; but rarely read, the popular impression being that it is a great poem—yes, so infinitely great that the average reader

cannot comprehend it. Those who have not read it, generally suppose that it is heavy and dull; and it is not so airy-light as most of our current literature. This impression has been given by the critics, the majority of whom have persisted in regarding the poem as a theological treatise rather than a work of art. Regarded in that light, of course, there will be as many opinions of it as there are religious sects and creeds. Like "Betsy and I," people will disagree about Heaven, and of course they will find fault with Milton's conception of the Father, the Atonement and the origin of evil. Whoever wishes to mar his own enjoyment of a beautiful work of art by discussing questions of this kind, is at liberty to do so, for myself, I prefer to leave theology quite out of the question, and to regard *Paradise Lost* simply as a poem.

Looking at the poem in this light, I would first speak

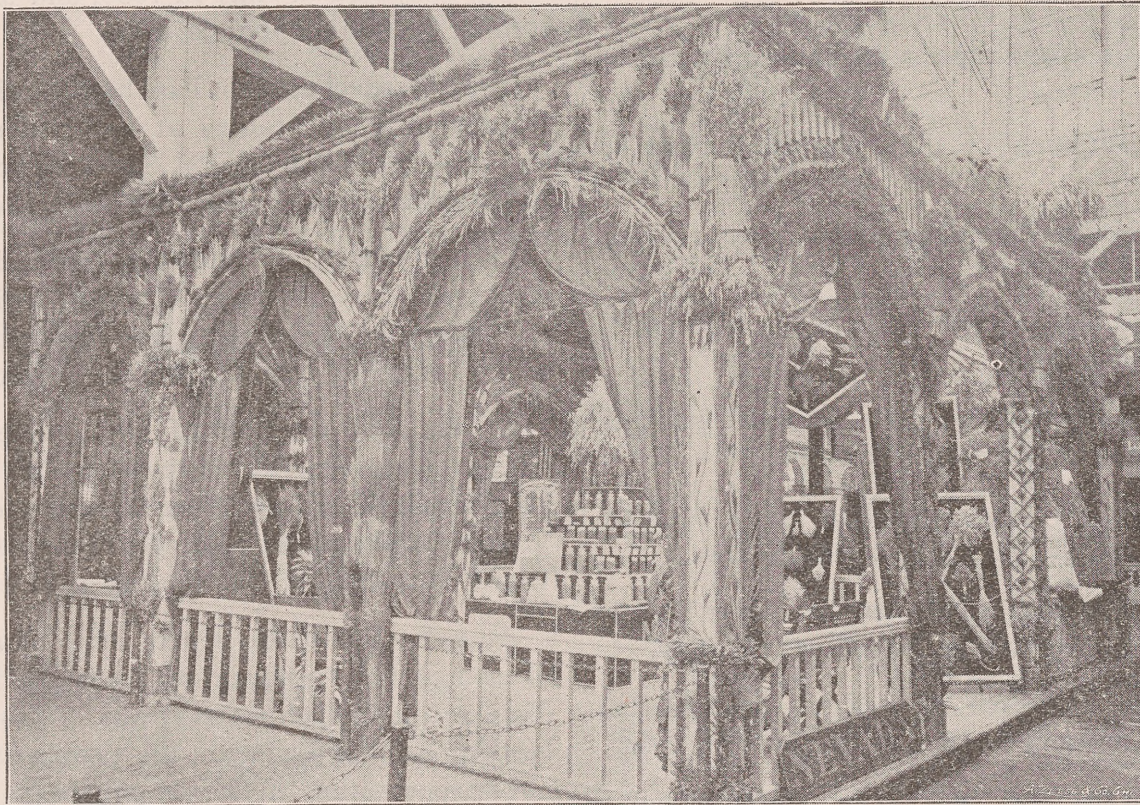
of Milton's rhythm, which is something unique. Without the looseness of the Elizabethan verse or the "correctness" of the Queen Anne, the verse of *Paradise Lost* is more melodious than either; and in variety, harmony and compass, it excels anything in English poetry, and is inferior, if indeed it is inferior, only to the Choruses of Greek Tragedy. This excellence is attained in various ways, especially substituting Troches and Dactyls for the regular Iambics, thus varying the movement in different parts of the verse; and still greater power is gained by combining several lines into what might be called a rhythmic stanza, the bond of unity being not rhyme, but rhythm. To this latter device are due the thrilling swells and cadences which abound in *Paradise Lost*. To these characteristic qualities, too, is due the difficulty of scanning Milton's verse; for the difference

between it and Pope's or Tennyson's is analogous to that between a symphony and a common air. Its harmony is not easily translated into sound, and like the symphony, not easily appreciated; but, I believe, by common consent of those capable of judging, Milton's verse, in this respect, excels all other English poetry, and prob-

ably reaches the possibilities of our language.

Without a knowledge of the poem itself, no criticism can give an adequate conception of its greatness; yet I will touch lightly a few of its characteristics in the hope of adding to the reader's enjoyment and understanding of this our English epic.

One of the most pleasing qualities of Milton's masterpiece is its vague suggestiveness. All the descriptions, Hell, Chaos, Paradise, Heaven, and the Earth are outline sketches, the details of which are left for the reader to fill in. The outlines are there, and with them are so many promptings and suggestions that even the coldest imagination is fired and compelled to complete the picture. This, when finished, may not be the same to every reader, nor even to the same reader at different times; it will always harmonize with his feelings and emotions, and hence satisfy and give the highest possible pleasure. Read Ovid's description of Chaos,



AGRICULTURAL BOOTH AND HEADQUARTERS OF NEVADA'S COMMISSION AT THE WORLD'S FAIR.

and a definite form, no longer chaos, is presented to the mind. Read Milton's, and every attempt at realization results in confusion worse confounded. You know then what chaos means. Dante's Inferno presents a picture as exact and inflexible as a mechanical drawing; and the description, with its distances and directions, reads not unlike a surveyor's field book. Milton's Hell is like an oil painting seen at different angles, where light and shade contrast, approach and mingle with various effects. In his description, no shape, no size appears—no definite torments, but vast desolation, full of dread and fear and apprehensions more hateful than any reality. There is fitting room for all that memory can recall, heart think, or fancy paint; and these faculties cannot choose but act, so strongly does the poet prompt them. It is always the same. All through the poem this suggestive mess is felt, and in my judgment, it is one of the highest elements of poetry.

Another merit is the clear-cut distinction of God angels and men. In Homer, gods and men associate, love, hate and fight in utmost confusion. Mortals almost equal the gods in might. Diomed wounds Apollo and drives him from the field.

There is nothing inartistic in this; for the conceptions are always consistent. But in Spenser a similar condition becomes positively faulty, when the Red Cross knight, though divinely aided, slays the dragon only after a long and apparently doubtful combat. Milton's manner is seen in the "Battle in Heaven." God leaves the warring angels to themselves, and, after two days, the battle is undecided. When at last Divinity interferes there is no longer doubt or delay. The divine power is irresistible, and the disloyal angels are hurled headlong from heaven. If it be objected that this is not God's way of dealing with men, and that Spenser's description comes nearer the truth, I must say again, that that is a theological question, while I am speaking not of theology, but of poetry.

Much fault has been found with the characters of Paradise Lost; but this, too, has resulted largely from confusing poetry and theology. If any one thinks that

The Father, The Son, Adam and Eve, are not true to Biblical types, he has a perfect right to that opinion. The same thing might be said of Michael Angelo's Moses or Jeremiah; but this detracts nothing from their merits as works of art, and the same is true of the characters of Paradise Lost. All that art demands is that they should be clearly conceived and consistently developed; and this, I hold, they are. Satan is admitted to be a masterpiece. The others seem to me hardly inferior. They are said to be cold and passionless, but this statement is too strong. Passionate love, certainly, they lack; but the moral and religious feelings are strongly expressed, and thus human interest is retained, and the requirements of art are satisfied.

These characters, however, do show one of Milton's greatest weaknesses—a lack of dramatic power, which, though not essential, is desirable for the epic poet. In this respect Milton is far inferior to Homer, Dante and Chaucer, though equal, perhaps, to Vergil and Spenser. He even lacks the ability to adopt his language to the speakers into the mouths of all, Adam, Eve, Michael, Satan and even God, one language is put and that is Milton's



INTERIOR OF AGRICULTURAL BOOTH AT THE WORLD'S FAIR.

own. Thus the characters lack something of individuality, and this is one very serious defect of the poem.

Lack of humor was another defect of Milton's mind and is plainly felt in his work. It is but one step from the sublime to the ridiculous, and this step, I am sorry to say, Milton sometimes takes. His satiric dart was a genuine Macedonian lance, very effective against the clumsy Dutchman, Salmasius, but quite useless, and utterly incongruous, in the hands of nimble spirits. Of this the poet is wholly unconscious. He cannot see the ridiculous side of things. Like Spenser, he lacks the restraining power of humor, and hence, in Paradise Lost, as in the Fairy Queen, some passages not intentionally witty provoke spontaneous laughter.

These defects, though they show the limitations of Milton's genius, are quite insignificant, when compared with the many positive merits. Paradise Lost, therefore, considered as a work of art, easily puts its author above every other English poet except Shakespeare, and among the half-dozen greatest writers of the world.

NEVADA AT THE WORLD'S FAIR.

N. E. WILSON.

ONLY those who saw it with their own eyes can appreciate the exhibit made by the State of Nevada at Chicago. It in every way refuted the oft-heard statement that, "Nevada is nothing but sand, sagebrush and alkali, fit only for a roaming ground for the Indians." The exhibit was, in this respect, most remarkable. It was a source of great pleasure and merriment to see people come into the agricultural booth and stand as one transfixed, gazing in wonderment at the display before them, usually exclaiming, "*Nevada?* The State of Nevada? Why, I didn't know they raised anything there."

It is in place, before going into details concerning the exhibit, to say a word or two about the Executive Commissioner, Hon. J. A. Yerington, to whom is largely due the credit of collecting and installing so tastefully the products of the State. Mr. Yerington was born in 1864, and has been a life-long resident of Nevada. He was educated in an eastern university, has traveled around the world, which experience, coupled with his extensive knowledge of his native State, her products and resources, eminently fitted him for his position as Commissioner. He received his commission in March, only two months before the opening of the Exposition. Nothing had been done up to this time. Nothing daunted, Mr. Yerington set to work and in just one month was en route to Chicago with the complete exhibit. During this short time he traveled by railroad and stage 2,200 miles.

The exhibit was in three distinct departments — Agriculture, Mining and Archeology. No space had been secured in advance, but Nevada was favored by Idaho's misfortune, and secured the space in the Agricultural

building which was to have been occupied by the agricultural products of that State. The mining exhibit found space in the gallery of the Mining building, and the pre-historic prints went to the gallery of the Anthropological building.

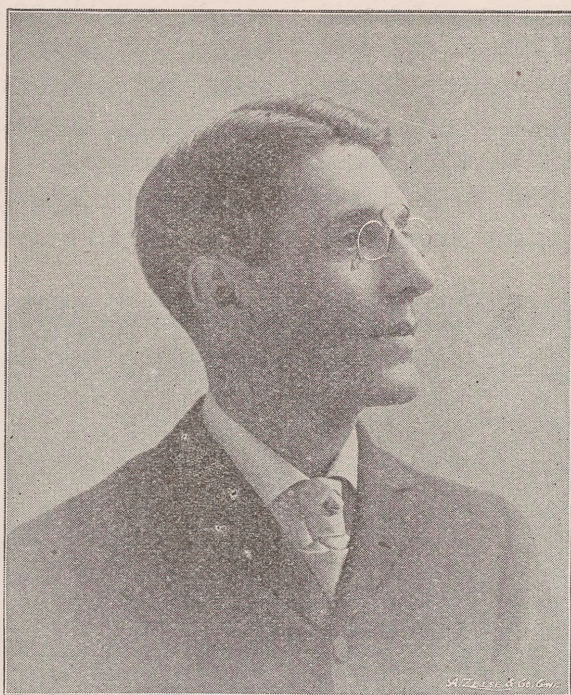
'Though complete in many respects, the mining and pre-historic exhibits had to give way in prominence to that of agriculture. This was something unlooked for by those who knew naught of the State's possibilities in this line. The world knew Nevada as a mining State. It expected a good exhibit in this line and was by no means disappointed. The pre-historic foot-prints were known throughout the educational centers of the world, but *Nevada agriculture* was something unheard of and to the minds of the masses something next to impossible. The Fair was full of surprises, but greatest amongst them stood Nevada's agricultural exhibit, interior and exterior views of which are given in accompanying cuts. The quality of her cereals was a matter of great interest, and the extreme light color led many to ask, "How did you bleach those oats?" or, "What did you do to that wheat to make it

so white?" "Irrigation and sunshine," was the only answer.

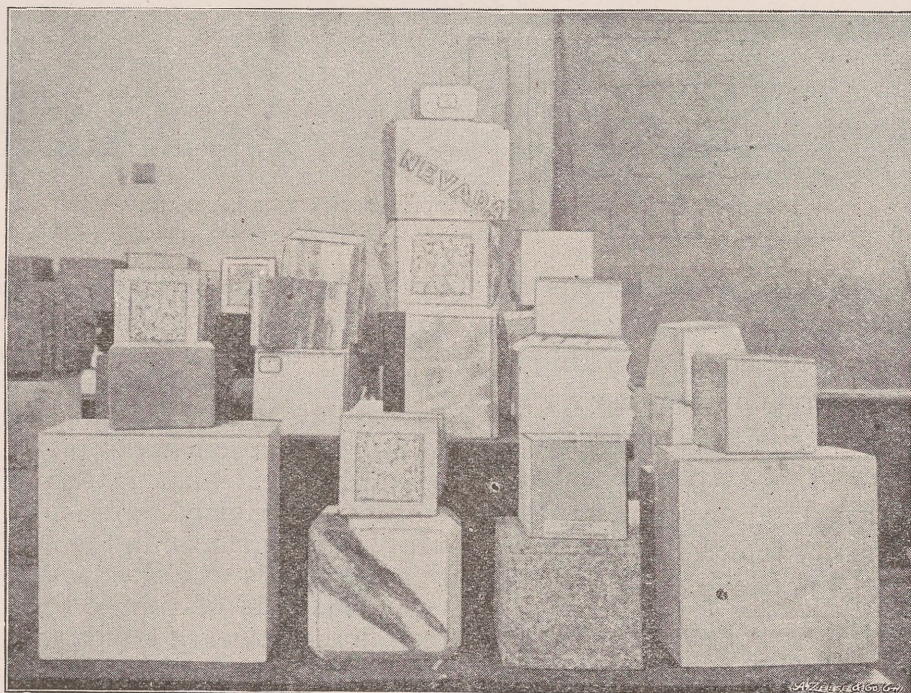
The mining exhibit was a truly wonderful display and particularly interesting, as no attempts had been made to improve upon nature, and rear great columns and statues, but the entire exhibit was a simple display of Nevada's vast mineral wealth, just as it was taken from the mines.

The display of chemical salts, such as borates, silicates and sodas attracted much attention, and it may be stated that Nevada salt and soda took first premium, analyzing over 99 per cent pure.

The pre-historic foot-prints exacted deeper interest from the scientific world than anything else shown at the great Fair. The exhibit was a reproduction of a section of the



COMMISSIONER J. A. YERINGTON.



NEVADA'S EXHIBIT OF BUILDING STONE AT THE WORLD'S FAIR.

Nevada State Prison quarry, at Carson City. The walls rise to a height of from 12 to 32 feet and surround the quarry on three sides. Upon the floor of this excavation are found the fossil remains of what are supposed to be the tracks of a human being, the elephant, hyena, horse and tautalus or mammoth wader. That the elephant's tracks are genuine there can be no doubt, as the skeleton of one was uncovered in the quarry and the teeth and hip-bone were exhibited with the tracks at Chicago. The right and left prints of the supposed human feet were also exhibited, thus giving all scientists the opportunity to see and study them for themselves.

The object of the exhibit, especially in the agricultural line, was to show the possibilities and resources of the State. This it certainly accomplished, and thousands of people left the Exposition with a knowledge of our capabilities impressed upon them in a manner which could have been accomplished in no other way. Our agricultural exhibit differed greatly from those of other States. They represented the products of States already made, Nevada's represented the great possibilities of a State to be made. Her agricultural advantages have not yet been largely developed. She is to-day in a transitional stage between mining and agriculture, and to agriculture she must largely look for her future. This is not an impossibility, for her thousands of acres of farming lands, with good and abundant water supplies, are waiting only the touch of the farmer's hoe to cultivate the soil, and it will bring forth fruit abundantly.

The climate of Nevada is so diversified that her possi-

bilities have a great range, from the cereals and vegetables of the colder portions, to the cotton, lime, lemon, fig, prune, almond and other products of the semi-tropics.

The State invites investigation, and to those interested we would say: Visit the State and see for yourself, or see her exhibit at the California Midwinter Fair, and you will no longer say "Nevada has no future."

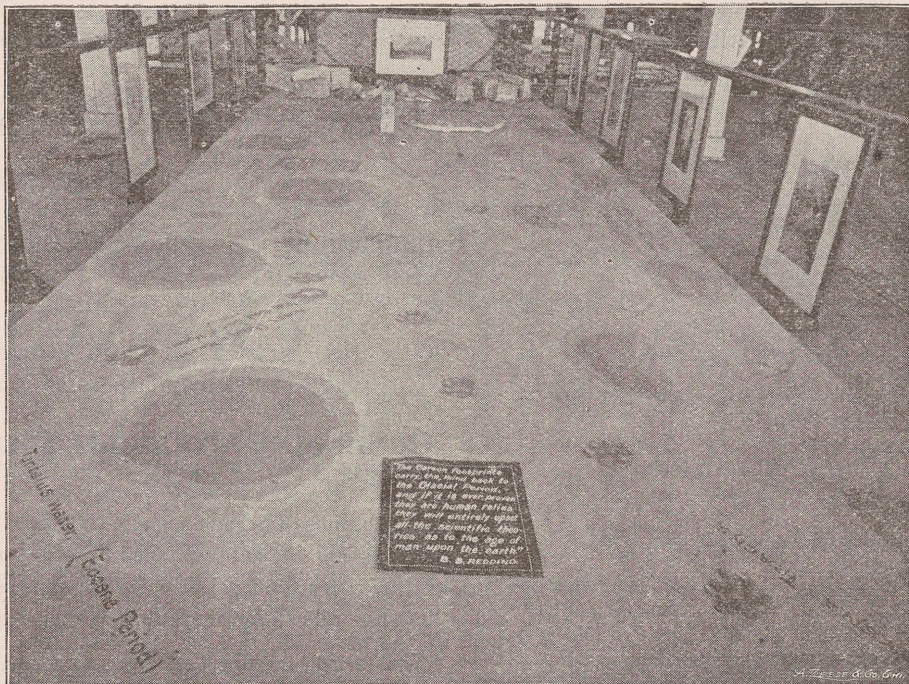


EXHIBIT OF PRE-HISTORIC FOOT-PRINTS AT THE WORLD'S FAIR.

Mr. Wright went out to fish,
And he became a Wright angler.
He thought he would try and catch a shark
And became a try angler.
He laughed to think how smart he was,
And he became acute angler.
But he did not see the shark with its nose

under the stern of his craft,
He was such an obtuse angler,
Until the creature tipped over his boat.
When he became a wrecked angler.

—Whitehall Times.



PRE-HISTORIC EXHIBIT AT THE WORLD'S FAIR.

She giggled when he talked to her,
She giggled when he stopped;
She giggled when he kissed her first,
She giggled when he "popped;"
She giggled when the day was set,
She giggled when they wed;
And now he often wonders if
She'll giggle when he's dead.

—Kansas City Journal.

Uncle George—I trust, Henry, that you are out of debt.

Henry—No, I haven't got quite so far as that; but I'm out of about everything else.—Boston Transcript.

Bits of Fun.

The goat ate four tomato cans,
 And then ate four pounds of nails.
 He finished his meal by way of dessert,
 By consuming four large fence rails.
 Then he said to himself with a jovial smile,
 As off to his home he ran,
 "I don't think that the nails can hurt me,
 But perhaps the tomato can." —*Ex.*

The lamb grew to enormous size—
 His mistress ran the dairy;
 One day he put her up a tree,
 And then the lamb had Mary. —*Wasp.*

"Light of my life!" the young man cried,
 A-courting of his lass;
 "If that's the case," the maid replied,
 "Let us turn down the gas." —*Ex.*



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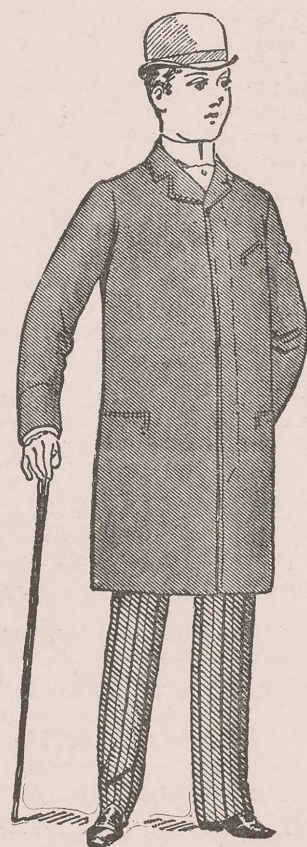
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