The Chrysanthemum.

Thomas G. Cushing.

The season of chrysanthemums and foot ball is now at its height. In the halls of the rich, and in the cottages of the poor; on street corners and in the windows of many stores can be seen masses of bright autumn flowers. It is unfortunate that the dud and the chrysanthemum were ever associated. There is such a wretched lamentation of them that I refuse to recognize the association. The growth of the one is upward; the other is downward.

The chrysanthemum was originally a native of China and Japan, and it was introduced into cultivation in 1764. It was not until sometime in 1868, however, that it received its first introduction to American society, at the Horticultural Society of the Massachusetts State Horticultural Society.

Attention was again attracted to it twenty years later by what was considered a rash speculation on the part of an enterprising nurseryman of Boston. A small number of plants were brought into the greenhouse. If paid to a Boston florist the enormous sum of $1,400 for the stock of one variety in 1888, however, that it received its first introduction to American society, at the Horticultural Society of the Massachusetts State Horticultural Society.

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The Chrysanthemum.

R. F. Gladden.

The old apple orchard, originally comprising about nine acres, was set out in 1858. The plantings were mostly Northern Spy, Baldwin, Talman Sweet and Seek-no-further. The location chosen was not a good one, so far as soil and exposure are concerned. The soil, for the most part, is a sandy loam, with a quicksand foundation. Of the original setting in a Baldwin remains. The Northern Spy and Westfield Seek-no-further have withstood the unfavorable conditions here. In some years the crop of apples borne has been a large one, but the general production has not been large enough to have been expected had the location been better. Orchards to give best results, should be situated on the higher lands, and the soil be of a gravelly loam, or of a clayey nature, and with a good strong clay sub-soil beneath. Many of the Northern Spy and Seek-no-further trees have been used as stocks to graft newer varieties upon. One portion of the old orchard has been left in soil for the most part, old and well-known varieties planted, but the other part has had thorough cultivation during the season when cultivation should be largely used for purposes of experimentation in the use of the various fungicides and insecticides.

The College Orchards.

H. P. Gladden.

Among the items in the program of Conference of Michigan Farmers' Institute Workers, Agriculturical College, Friday, Nov. 20, 1896.

2:00—Model lecture, Prof. Clinton D. Smith.

2:25—Brief discussion, carried on by workers.

3:00—Critical comments and questions on the above.

Evening—College Chapel.

7:00—Miscellaneous topics for ten-minute discussions:

1. The question box.

2. Getting acquainted with the farmers.

3. Women's sections.

4. Advertising, M. A. C. and Experimental Station.

5. Granges and farmers' clubs.

6. Railroad and hotel rates, and accounts.

8:00—Institute principles and practices in several states, Kepnel L. Butcher.

Discussion.

Both sessions will be open to any who may desire to come.

Wooden vs. Iron Ships.

Mathematical calculations show that an iron ship weighs twenty-seven per cent less than a wooden one, and will carry 115 tons of cargo for every 100 carried by a wooden ship of the same size. East of the new continent, the horticultural department is a general assortment of plants, numbering specimens of the American varieties. These were set out in 1897.

In 1890 an additional twelve acres was obtained from the agricultural department at the eastern limits of the College grounds. A portion of this is quite sandy and on a slight elevation, hence, it has not been planted. On other portions pears and apples have been set out in considerable variety. These have been set closer than they are expected to stand, when fully grown, with the intention of removal of some when necessary.

Controlling, as the College orchards do, up of 500 varieties of apples, 100 of pears and of plums, 50 cherries, together with many quinces, apricots, mulberries, etc., excellent opportunities are offered students and visitors to become familiar with the habits of growth and merits of many sorts of fruit. Propagation of trees is done by students from sowing the seed to grafting and budding. This work gives the College stocks to work new varieties and open to trees to replace those that die and to enlarge the orchards when mature.
Charcoal Burning by Two Generations

W. G. MERRITT, with '93.

If all the lumber now standing in this state could be utilized for lumber, the charcoal industry would languish, but timber permitting lumber manufacture is made use of by the application of a chemical principle to convert a waste material into marketable products. The changing of wood charcoal is a chemical change. The application of heat to the wood fibre breaks up the chemical combinations of carbon, hydrogen and oxygen, giving a great variety of new compounds. Many of these compounds are volatile and pass away as vapors or gases, but the main part of the carbon of the woody fibre is liberated from combination with itself and remains behind as true charcoal. While it resembles wood to some extent in appearance, it has a weight about to 25 to 30 per cent. of the original weight of the wood from which it was made. It is not absolutely pure carbon, for it still contains a small amount of ash and about 4 per cent. of the other constituents of woody fibre.

CHARCOAL BY THE PRESENT GENERATION.

The method employed by the first generation of charcoal burners, and still in use to some extent was merely to place wood in the chimney of an old hearth and let it burn. In this way it was started up to a fire, after which it was unattended. Such charcoal results by this treatment as well, by our improved modern methods, because air is excluded and heat is present. To convert additional wood into charcoal called for digesting more pits. To avoid this labor, permanent charcoal ovens were constructed. These are round, shaped like barrels, and so well constructed that they are proof against wind and rain. The odor which such charcoal emits is caused by the escaping smoke, which consists of a mixture of gases and vapors which are inflammable, but which are merely burned at the top of the oven.

Six of these brick ovens were built near a bridge a dozen years ago and operated for four or five years. Many of the students of about that time remember that they had improved charcoal pit thus constructed. Michigan's prevailing wind, so strong that the wood gases which escape without being condensed to form gases are forced one and one-half miles away. These ovens were the means of clearing, at considerable profit, several hundred acres of swamp lands in the industry. For thirty years wood alcohol has been thus recovered. Its recovery was so profitable that many works were erected especially to produce it. This chemical discovery so changed the industry that the former principal product, charcoal, got to be regarded as of secondary consequence and hardest to market.

CHARCOAL BY THE PRESENT GENERATION.

This is produced by placing the wood in horizontal iron retorts nine feet long and five feet in diameter, which are connected with the charcoal burners into charcoal.

Aside from the valuable products, wood alcohol and acetic acid, condensed and saved by modern methods, there is more to do in the recovery of waste in charcoal burning. By distilling the crude condensed liquor to obtain the alcohol there remains a solution of carbonic acid, which is used as a source of carbonic acid gas containing it. The process may be rapid or slow. When the oxidation is complete, the gas escapes quietly without taking fire. Whether this smoke burns as flame or not, it becomes part of the atmosphere. From this we derive a visible evidence of rapid chemical change. It is the process of combining of carbonic acid gas or containing it. The process may be rapid or slow. When the oxidation is complete, the gas escapes quietly without taking fire.

Tracing the elements of the process, the consumer is able to see the combustion of wood.
tar that Reichenbach, a German chemist, first discovered paraffin in thousands of gallons of wood tar and put anywhere to get by their local and distant friends. To make this material of use or to predict the outcome material from it is the problem before the charcoal burners of the coming generation.

The Farmers’ Club.

The farmers’ club is a growth of necessity in the organizations of this country. It has been advanced only in the last few years. In no division of society has organization been productive of such improvement, however, than it has in and among the farmers of our country. Farmers, as a class, are not so apt to put the good of any such organization. The meeting at which the political meeting is to the politician, the teacher’s institute is to the teacher, or the congress of religion is to the church member—a means for advancement along their several lines of work.

Their mode of operation is this: Leading men, and women, too, for the women play an active part in this work as do the men—who realize the good that may come from organization, meet and arrange a program, to do which the club has an annual meeting, which they call a special meeting. They are held at a farmer’s home. Everyone is invited to come and bring with him his wife and a well-filled lunch basket. On the appointed day a permanent organization is effective, with the necessary officers and committees. The forenoon is spent in making a tour of inspection of the farmer’s crops, stock, buildings, etc., and the forenoon visit by his neighbor farmers stimulates him in his endeavor to have everything up to the best possible. When he has been here, having arrived, every one produces the required lunch basket and proceeds to replenish the inner man. Following the program which consists of music, recitations, the presentation of specially prepared topics, and the discussion of each, “Groups on state questions, questions relative to local government and improvement, means of educating the children, and the farmer and wife, as well as are all discussed ably and with keen interest, to the welfare of the community.

It has been recently stated by one in a high position in our land, that the farmer is too highly educated. Now, he may be too highly educated to benefit a certain class of individuals materially, but he certainly can appropriate, for his own welfare, all education which strengthens his ability to successfully carry on his business. The farmers’ club is a very active proponent of this kind of education.

The clubs of Michigan have a joint organization, known as the Associated Farmers’ Clubs. This association has a department devoted to its use in the leading state agricultural paper, The Michigan Farmer. This department is now present by C. A. Bird.

Much has already been accomplished in the way of reform by the joint action of the clubs. Taxes have been lowered considerably in several of the leading counties of the state. Much is being done toward the adoption of the “good road” movement. Unworthy officials have been replaced by others who were better fitted for office. Much attention has been given to our state institutions, both penal and educational. In fact, these meetings have been in every way of advantage, and in every way of advantage, to the welfare of the farmers and to the farmers of the country. Farmers, as well, are all discussed ably and with keen interest, to the welfare of the community.
The M. A. C. Record.

PUBLISHED WEEKLY BY THE MICHIGAN AGRICULTURAL COLLEGE
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Industrial Education.

In education three objects are to be aimed at. First, ethical or moral culture, to fit the pupil for the duties and, third, economic or practical value. Children should be taught to have a well-developed and highly enlightened moral nature. They should be taught to understand and to reverence the will of God, and obedient to the laws and ordinances of man. They should be taught to understand and to reverence the laws and ordinances of the state. Their education should be aimed at making them moral men and women.

Moral Law.

Children should be taught to have a clear conception of right and wrong; to have an idea of their obligations towards God, towards their parents, and towards their country.

What were the conditions a century, or so, ago? The boys worked on the farms, and the girls did some work in the homes. The boys were taught to have a clear conception of right and wrong; to have an idea of their obligations towards God, towards their parents, and towards their country.

The school education of each was of short duration, and perhaps of not a very high order, but they had served a long apprenticeship for the trade of the world and were ready for the world. They were taught to have a clear conception of right and wrong; to have an idea of their obligations towards God, towards their parents, and towards their country.

The happiness of the individual, the good of society, and the state demand that the moral element be brought into the work at home and cannot afford to do without. The teacher must be a teacher of moral law.

But what is wrong? The boy was educated to take hold of the actual life. He was educated to take care of himself and his family, and to take care of his master and his employer. He was educated to have a clear conception of right and wrong; to have an idea of his obligations towards God, towards his parents, and towards his country.

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be at the mercy of ignorant servants whose duties she does not possess the requisite knowledge to oversee and direct.

Most mothers would hesitate or probably refuse to give their daughters in to the care and keeping of a young man who had no trade, calling or tangible means of support, but at the same time Miss Adams will allow her daughter to marry such a man because she cannot help it, to take to herself a young woman as wife, who has no training or knowledge of the duties awaiting her in the most noble of all vocations open to women. The records of our divorce courts are filled with cases of failed marriages; but no writer that ever would have materialized had the woman been able to manage the economies of the household as the man was to earn the fortune for the family.

During these times of general depression we need not only better prices for our produce and better wages for our laborers, but above all we need to learn how to live economically and keep within our means. For the better result the world must look mainly to the house wife trained in household economy.

Academies were soon started to prepare children for the universities. If high school graduates were compelled to omit important elements of learning, and they were right in putting character and culture above the study of mechanics, this was a result the world must look to the housewife to remedy how to live economically and keep within our means.
Industrial Education.

(Continued from Page Five.)

needs of the few who expect to take a college or university course, but to the many the opportunity of necessity compelled to leave school often before the grammar school course is completed they offer no opportunity whatever for practice training.

Teach young men to work.

Very much has been done in industrial education in this country during the last twenty-five or thirty years. There has been a good deal of higher learning and technical training along these lines as there were higher institutions of learning in existence in the south at the time of the war. Many prominent technical schools have been started and to many of our universities have such departments been added.

Nearly all our larger cities have added this work to their public schools, but close to the present sentiment is compelling this work to be taken up. People realize that at least, to some extent, the public schools should provide for the work of life. Above all, they are convinced that it is not the function of the public school to turn out boys and girls away from labor. They realize that the school should educate pupils to work-not only to despise for its meaning to put forth the great bulk of human effort, and in so doing, be fitted for their environment. It is all right for a bright pupil of the public school to encounter environments and enter a profession or some other advanced field of labor, but it should not be made an object of the school to turn a pupil away from such fields of work.

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Wayside Trees in the Country Highway.

The following by C. W. Garfield, '70, in the Michigan Outlist gives some valuable suggestions for artistic effect in country road building. If those who follow the suggestions of Hon. G. D. Crispin, who had an article in the issue of October 20 on "Roads," would also keep in mind this artistic effect, there could be fewer monotonous, dreary stretches of country road:

"There is nothing gives a greater charm to a country highway, once having a good roadway finished, than the wayside trees. The satisfaction of the cool shade on a warm day is but a small part of the enjoyment to be derived from the syren border. Still the creature comfort should not be neglected in the argument for planting trees along the roadside. The pleasureable sensation one absorbs when looking down the street bordered on either side by a row of stately trees, so well trained as to not have a break in the line, is one well worth a long ride or walk to obtain.

But to one who has an artist's appreciation of scenic effects the keenest pleasure is derived from a natural arrangement of the trees that embellish the highways, hence the attractiveness of the country roads along which in a generation the farmers have allowed the various species of trees to grow up at will in the corners of the rail fences.

"Nature is no mean artist in the arrangement of trees in groups, if she is not meddled with too much; and while many a farmer is called shiftless because of the unkempt appearance of his fence corners, and the members of the agricultural press ring changes on the advice given to maintain clean, well kept borders to the farm, we have the men to thank who neglect to profit by this counsel for a great deal of our wayside beauty.

"To be sure many of the succeeding generations, with the cleaning up spirit of their predecessors, have scattered rain in their wake by making a complete cleavage of what nature had arranged as a matter of ornamentation to the farm and an attraction to woo the pedestrian and please the traveler. Yet in many places the natural groupings have been retained and thus real value saved to the premises and pleasing character preserved to the roadside.

"We cannot emphasize too strongly the importance of studying the beautiful effects produced by the naturalness in arrangement of roadside planting. The regular distance planting has so many trials to encounter to attain perfection in results, that it is almost impossible to attain approximately the symmetry we seek. A single break destroys the harmony and makes a blunder that cannot easily be hidden.

"On the other hand, in arranging plantings in groups a failure or an accident is not apparent, and can at any rate be remedied, because there is so great a variation of perfect results.

"A single tree or a cluster of burr oaks, through some accident, may be destroyed and soon the growing branches fill the vacancy and really no damage is experienced.

"There is a practice quite common and reprehensible in the extreme, which seeks to destroy this natural grouping of small trees, by selecting individuals at as near regular distances as possible, and removing the remainder in the neighborhood of the artificial method of planting. This is unsatisfactory at least, because as a copy of the regular system, it is noticeable principally for its failures and trees selected from groups and driven from their supporting fellows, make a sorry appearance as individuals.

"The sky outline of a group of roadside trees is an important element of beauty. And a combination made up from one's knowledge of individuals is often disappointing, while another arrangement of species which one would not commend, not having seen it, proves very satisfactory.

"In a row consisting of a wild cherry and a sugar maple which stands at the foot of a hill and makes a very desirable combination of foliage and a wonderfully attractive sky outline, the American elm is generally recommended for its beauty as an individual; still we recall a group in the corner of a field where two roads intersect at right angles, in which a firs is the central figure and is surrounded by a cluster of burr oaks, the whole making a very artistic group with fine outlines, both in summer and at the season when no leaves adorn the branches.

"Winter effects in roadside trees are well worthy of consideration in our northern climates. One not thoughtful or observing can scarcely imagine how surprisingly attractive the framework of trees is when outlined upon the sky, nor how great diversity in individuals and species can be secured by discreet selection, and not in any wise depreciate the summer beauty."

Then and Now.

In the days of old,
When knights were bold
And chevaliers were gay,
To kiss a miss
Were counted bliss,
As poets used to say,
But now-a-day
"Germans" are the craze,
And science holds full sway.
To kiss a miss
Is dangerous bliss,
Wise scientists do say,—Ex

Heard at the phone in the Library building during the dinner hour: "Hello, central. Abbots Hall, please. Hello, hello, is this you? Too bad you didn't get that gun. Yes, — —. How did you like the roses? Yes, — —. Yes, all right. Good bye."
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ON THE FARM
PLANNING WORK
FOR THE WINTER

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