

# THE SPECULUM.

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## The History of a Bill.

ALBERT B. CHASE, ECLECTIC SOCIETY.

A bill is a draft of a proposed law presented to a Legislature. Before becoming a law, it must go through certain processes which will be outlined in this article. A joint resolution is similar in import to a bill. All joint resolutions that direct the payment of money, incur any expense, or propose an amendment to the constitution, are governed by the rules that control the action of a bill. A concurrent resolution is a farther departure from a bill. Generally, the object is not so important, and it is not governed by such strict rules, as is a joint resolution. All bills and joint and concurrent resolutions, except those relative to adjournment and to legislative expenses, must be signed by the governor before they take effect.

Bills may be introduced in either house. They are introduced by a motion for leave, or by a committee. At least one day previous to the day of introduction, a notice must be given, which shall contain the title of the bill and the name of the member who intends to introduce it. As a rule, bills are not introduced by a committee, but by the chairman in his own name. Bills cannot be introduced by the governor or by the people. The latter can petition the Legislature for any law, but the bill must be introduced by a member or a committee. Each bill is given a number as it is introduced, and this is known as the bill number. All bills and joint resolutions must be introduced during the first fifty days of the session, but concurrent resolutions are introduced at any time. If any bill is lost, a bill having similar provisions cannot be intro-

duced at the same session. To get around this rule, two or three bills of similar provisions are introduced at the same time. If one of these is lost, another is brought up, and by taking out a few objectional features, it will be quite liable to pass.

All bills must have three readings in each house before they are voted upon. Concurrent resolutions are read once and then laid on the table for one day. A bill is read twice by the title immediately upon its introduction, and is then referred to a committee by the president. (We will suppose that our bill has been introduced in the Senate.) If the Senate so desire, the bill will be laid on the table. All petitions and remonstrances in reference to this bill are referred to the committee that has the bill. The second and third readings must be on different days, unless two-thirds of those present decide differently. All bills must be read twice before being referred to a committee, or being amended.

The committee considers the bill very carefully, and its report generally decides the fate of the bill. The committee gives the introducer a hearing on his bill. It also gives a hearing to any delegation or person that wants to speak on the bill. These delegations or lobbyists have quite an influence in the passage of the bill. Four years ago, Miss Frances E. Willard spoke to the judiciary committee on the benefits to be derived from the passage of the joint resolution submitting an amendment to the Constitution prohibiting the liquor traffic. As a result of her talk of less than half an hour, the resolution was reported favorably and afterwards passed both houses.

After considering the bill a sufficient time, it is reported to the Senate with or without

recommendation. One way for a committee to kill a bill is to keep it—not to let the Senate get hold of it. If the bill is not considered of much importance, it is reported to the Senate without recommendation. If the members of the committee are in favor of the bill as it stands, they report it without amendments, and recommend that it pass. They may amend it or substitute a new bill for it and recommend that the substitute, or the bill when so amended, do pass. The substitute must have similar provisions as its original. When a bill is reported in any of the above ways, it is ordered printed, referred to the committee of the whole, and placed on the general order. As each bill is ordered printed, it is given a new number, which is known as the file number. Some important bills may be put on the special order instead of general order. They are made the special order for a certain day, or for a certain time on this day. When this appointed hour comes, the house must lay aside the business it is then transacting and take up the special order.

If the committee are not in favor of the bill, they may recommend that it do not pass, that it be laid on the table, or be indefinitely postponed. In the first case, the bill may be put on the general order, laid on the table, or indefinitely postponed. To indefinitely postpone the consideration of a bill is to put it out of reach for the rest of the session. If a bill is tabled for the purpose of killing it, it may be revived, but it is very improbable that it will be. A committee may recommend that the bill be referred to another committee, or to two committees, if it believes that the bill does not properly come under its consideration.

The committee of the whole is the Senate resolved into a committee with a member in the chair who is called there by the president. The president takes a seat and may debate all questions. When there is a tie, he may give the casting vote.

“The rules of the house are observed in the

committee of the whole, so far as they may be applicable, except that it (the committee) cannot refer a matter to any other committee; it cannot adjourn; the previous question shall not be enforced; the yeas and nays shall not be called; a motion to indefinitely postpone shall not be in order; a member may speak more than once; the title or enacting words of a bill or joint resolution shall not be amended or stricken out.” All bills are considered in the order in which they were referred to the committee. All amendments must be made on separate slips of paper, as the Senate may not concur in all the amendments. This committee may make the same kinds of reports regarding a bill as any other committee.

When the bill is reported from the committee of the whole with a favorable recommendation, it is placed on the order of third reading of bills. On the third reading, there is little or no debate, as the bill has already been fully discussed in the committee of the whole. No amendment can be offered at this stage unless a majority allow it, but it can be referred to a committee any time before the final vote is taken. If the bill has not been through the committee of the whole, it may be amended on its third reading. The final vote is taken by yeas and nays and the votes recorded in the Journal. No member is excused from voting except by a special vote of the Senate. It takes a majority of the number elected to either house to pass any bill. There are thirty-two senators elected. If there are thirty-one present, a majority of thirty-one (sixteen) would not carry the bill. Bills appropriating public money for private or local purposes, and joint resolutions proposing an amendment to the constitution, require a two-thirds vote. This is the same as before, two-thirds of those elected, being twenty-two in the case of the Senate. After the bill is passed, the title may be amended so that it will have but one object, and will conform



to the provisions of the bill. After the bill is passed, it may be ordered to take immediate effect by a two-thirds vote. If this is not done it takes effect ninety days after the close of the session. Any member voting on the prevailing side may move the reconsideration of the bill. This motion must be made before the bill goes to the House. No question can be reconsidered more than once. If the vote is reconsidered, it brings the bill back to the order of third reading of bills; if not, the bill is sent to the House with all papers in relation thereto.

When the bill is received in the House, it is read twice and sent through the same process as in the Senate. This process, of course, will be different in details, but will be the same as to its general course. It may be killed anywhere, but if it is passed in the House in the same condition as when it passed the Senate, it is sent to the Senate. All bills are sent from one house to another, by a message. The secretary of the Senate and clerk of the House carry on this correspondence. In this case, the clerk sends the bill to the secretary stating that the bill has passed without amendment. The bill is then referred to the committee on engrossment and enrollment, and a correct copy of it is made by one of the clerks of this committee. The bill is then signed by the lieutenant governor, the speaker of the House, the president *pro tempore* of the Senate, and the speaker *pro tempore* of the House. The bill is now sent to the governor and the committee on engrossment and enrollment report the same to the Senate.

Let us go back to the House. If the bill that passed the Senate does not pass in the House, the clerk of the House reports that fact to the Senate. If the bill is amended and then passed, the bill is sent to the Senate, the clerk in his message stating all the amendments. If the Senate concurs in the amendments, the bill proceeds as previously described. The Senate may con-

cur in a part of the amendments, or in none. In these cases, the bill is sent back to the House. If the House yields, the bill is sent to the Senate, and proceeds as before; if not, each house appoints a conference committee. These committees meet and arrange the amendments as they think best, generally making a compromise in the amendments. If the bill, as they report it, is passed in each house, it goes to the governor as previously explained.

If the governor signs it, he notifies the Senate of the fact, as the bill originated in the Senate. The bill is now an act, and is deposited in the office of the secretary of State. If the governor does not sign it in ten days, Sundays excepted, the bill becomes a law, unless the adjournment of the Legislature prevents him from returning it to the Senate. He may approve within five days after the adjournment of the Legislature, any bill passed during the last five days of the session, and the same becomes a law. If he does not approve the bill, he vetoes it, and sends it to the Senate with his objections. The objections are entered on the Journal, and the bill is reconsidered. It then goes through a process similar to what it passed through the first time, and upon its passage, it must receive a two-thirds vote. If it does not receive this, it is lost; if it does, it is sent to the House. If it receives the votes of two-thirds of the members elected to the House, it becomes a law. It is possible for it to live up to this point, and then be killed.

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### Garrison Life.

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LIEUT. J. J. CRITTENDEN, U. S. A.

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To delineate all the phases of the life of an American soldier in garrison requires more time and study than I can possibly give to the subject. Like society he has been influenced by those changes for good or evil that surround him. Twenty to twenty-five years ago the larger part of the

army was west of the Missouri river or in its immediate vicinity, where immigration as yet had made comparatively few homes. Here was the land of the buffalo hunter, trapper, stage robber, and all desperate characters that a more civilized state would not tolerate. The army no doubt carried its share of bad spirits to this section but paid for the negligence, in adding double the amount of work to hold this element in check as well as outside influences, that acknowledged no law but their own sweet will. The country grew in population. Railroads and telegraph lines extended and brought the two sections, east and west, into closer communication and those tendencies that lead to mere recklessness and animal existence were brought under subjection to law and order.

To-day the life in a garrison is very much as you see it here at the college; system and order, regular work that must be done, and is done, with its social life and amusements like that of a home. The personal comforts of the men are looked after, the commanding officer being directly responsible (to his superior) for their welfare, and having the same relation to the general government that the president of your college has to the State of Michigan. In every post the command is assigned by order and no officer can place himself on duty or assume command by virtue of his commission any more than any man with the degree of M. S., B. S. or Ph. D. can take charge of any one of the departments at this college without authority. The rank of the commanding officer depends upon the size of the post and its importance. Generally he is either a colonel, lieutenant colonel or major, always the senior officer present for duty. To assist him in the details and administration of the life of the garrison, lieutenants are selected to fill the various departments, such as show special aptitude for the work to be done. The two principal officers of this nature are his staff offi-

cers, adjutant and quartermaster. The adjutant, under his direction, has charge of the various rosters of service; will make, publish and verify all details; will keep the records of the post, and will perform such military duty with troops as are required by tactics and regulations. Through him the post commander communicates with his officers and men. He should be courteous too, and on friendly terms with the officers of the command he represents, and should avoid all discussions of the orders or military conduct of his superiors. He should inform himself upon all points of military usage and etiquette. He should endeavor at all times to exert the influence belonging to his station, in sustaining the reputation, discipline and harmony of the garrison. The adjutant has a sergeant major to assist him in clerical work and other duties.

The duties of the quartermaster demand in their performance, experience, discretion and business qualifications. He is responsible for the transportation, equipage and very largely all the public property pertaining to the post. An assistant called post quartermaster sergeant acts under his orders.

The doctor is an important person in garrison; he has charge of the hospital, the care of the sick and a general supervision over the health of the command. There are several assistants under the name of hospital corps and the number that each post has depends on the size of the garrison. They are trained especially for the care of sick and wounded and do nothing else.

Other positions are such as acting commissary of subsistence, who takes care of and issues rations to the different companies; ordnance officer, who attends to the keeping a supply of ammunition on hand as well as other numerous articles pertaining to this department. The recruiting officer enlists those who present themselves at the post for the service and can pass the necessary examination, physical and for character. The range officer has charge of the target



grounds, and during the firing season, he sees that it is ready for use. The post treasurer has the care of the bakery and the supplying of plenty of good fresh bread, also in charge of post schools.

The private, most numerous and lowest grade in the army, has all his wants attended to. He has no responsibility except that of keeping himself clean. Fuel, quarters, food, clothing and equipment are furnished; there is so much pay per month, with chances of earning in addition to this regular allowance from ten to fifteen dollars per month for skilled labor or any work not the legitimate duty of a soldier to perform. Men frequently leave the service at the end of five years enlistment with five and six hundred to a thousand dollars saved. The duties of a soldier are simple but exacting. Drills, guards, inspections, policing of the garrison, and some general repairing will cover about what he does without extra compensation. The government provides quite a number of daily papers and magazines and has a small miscellaneous library at each post.

### The State Mining School.

A. L. WATERS, '90.

I am requested to write to the "SPEC." about the Michigan Mining School. One of the most wonderful schools in the world, as it is, I am pleased to introduce it to the most famous school of Agriculture. Wonderful because from a weak beginning in an old engine house, a purely technical school, situated in a northern latitude, it has risen in five years to a leading position and has now more students of mining engineering than any other school on the continent.

The Mining School is a plain red sandstone building about the size and shape of Williams Hall. It stands about one hundred feet above Portage Lake on the brow of a steep bank; the village of Houghton lies to the west, and across the lake, clinging to the hillside and a mile away, is Hancock.

Five large mines are working within a radius of three miles, and nearly all the great mines of the Lake Superior region are within forty miles. In sight there are also large stamp mills for getting the native copper from its rock, and copper smelting works and rolling mills to purify and manufacture the metal. The laboratories and class rooms in the building are finely equipped with most modern appliances. The library is a rather poor affair, but every effort is being made to improve it. There is also a small stamp mill fitted up with modern ore-dressing machinery.

The teachers are mainly young men with a reputation to make. There are only five teachers but the four full professors are rather extraordinary men. There is not one poor instructor here.

Mining engineering is taught here, and all branches bearing upon it—chemistry, geology, higher mathematics, electrical engineering, and related branches. The course requires three years. The degrees of E. M., and Ph. D. are given. It is supposed to be a post-graduate course, but very few of the fellows are post-graduates. The school is eminently practical. There is a great deal of laboratory and field work. Not only is there laboratory work in the fall and winter terms, but half the year is used for almost nothing else. Throughout the year, excepting June and Christmas time, we are here and put in seven hours a day, five days a week; outside of this time the lessons must be prepared. The fall and winter terms are what we call "terrors." We carried eight studies during the winter term; four of them were mathematics, in which we recited from two to five times a week. We had from three to five recitations a day, the rest being laboratory work, or drawing. Even the mechanical course at M. A. C. is a perfect "snap" when compared with this. Yet a man who has taken his B. S. there is finely fitted to enter this course.

Board is the main item of expense here. We board in private houses, and pay from \$16 to \$25 a month. It costs from \$400 to \$1,000 a year, although I am told three or four men are getting through for about \$300 a year.

The services of the students who study at the school are in demand. Every graduate but one, and the large majority of those who have studied here are now employed in some branch of engineering or chemistry connected with mining. At graduation they receive from \$400 to \$1,500 per year; the smaller amount being paid to men who have yet to learn the ways of the world and the management of men. In the few years that they have been out these salaries have risen to amounts ranging from \$900 to \$3,600.

Considering the fact that the school has but sixty students it makes a good showing in athletics and were it near enough would no doubt, enter the M. I. A. A. The Athletic Association is well supported by the students. We are particularly proud of the foot-ball team, which is champion of this region and we regret much that it is not near enough to play games with the other colleges of the State. Unless there are stronger teams at Field Day than ever before, I think it could defeat any of the association teams, and it expects to "tackle" the U. of M. team during the season. Baseball, tennis, boating, and other sports are strongly encouraged.

M. A. C. has sent more men here than any other college. Those now here are Abbott of '87, Lawton of '88, Hooper with '90, Shattuck and Church with '92. The little colony now here hopes that it will be allowed to welcome more next September. The course is very thorough but any average student who comes here with a determination to work can get along. Credits are given on physics, drawing and anything else taken properly before. It is most difficult to get a credit in chemistry.

I had hard work getting a year's credit covering elementary chemistry, and Abbott is taking it all. After you have been up here about a month you make up your mind that you never saw a chemistry before. The catalogue can be relied upon as telling the exact facts, and can be got by writing to the Director of the Mining School, Houghton, Michigan.

Houghton, Mich., May, 1891.

### Station Work as a Profession.

C. B. COLLINGWOOD, '85.

If it is true that experiment stations have come to stay, a new profession has been opened to young men. The student with a desire for scientific investigation has, up to now, usually found it necessary to become a teacher or a doctor to enable him to carry on his work. With the opening of more than forty agricultural experiment stations, each with its corps of workers, the field is enlarged, and specially trained men are required.

The distinction is purposely made between teachers and station workers, because the tendency seems to be to separate the two. The teacher must be thoroughly conversant with all branches of his science, and he should have done some original work, but most of all he must have the spirit of a teacher, which is born and educated, not made to order. He must be free to give his undivided thought and time to methods of presentation. On the other hand, while the worker in a station must be broadly educated in general science and particularly in his especial department, he must be free to devote his time to laborious investigation in somewhat narrow lines. Some of our best teachers may be our best station workers, but to demand that an experimenter shall be a teacher is like demanding that a minister shall earn his living by teaching school six days in the week, besides preaching Sunday. A complete separation, in many cases, can-



not take place for some years yet, but it is almost sure to come, and will help both professions.

The young man who hopes to become a successful station worker must possess certain special qualifications besides thorough training in his particular branch of science. He is fortunate if he has been brought up on a farm. He will, by this training, have acquired an understanding of the details of farm work and a sympathy with the farmer which is seldom otherwise gained. Unless a young man finds himself in touch with the farmers, and has good common sense, no matter what his scientific acquirements may be, there is no place for him in station work. That he should be educated in an agricultural college goes without saying. Such institutions furnish the most practical training for such work, and few students from other colleges would deliberately choose such a profession.

Let it be supposed that the student is in his second year at college, and that he has, after due deliberation, decided to enter this new profession. What can he best do besides take the regular work laid out for him? He will, of course, devote as much time as possible to his chosen branch of science. Besides this it will be of great value to him to become thoroughly acquainted with the history and literature of agricultural experiments. This will give his thoughts the right direction and enable him to avoid errors and useless repetitions. To do this he should, while a student, gain a working knowledge of at least one of the foreign languages, preferably German. He should keep posted on the work done at the different stations in this country, and study carefully the experimental work done at the station connected with his college.

All this gives the student a good deal of work and it will be well if he can extend his course by one or two years as a post graduate. Nothing could be more valuable to the student at this time than a few years as

assistant in his home station. If he could have a year of foreign travel it would be of great value, but most agricultural college students have to defer that for some years. As the work of the station becomes more scientific more thoroughly equipped men will be demanded. While the number of workers will always be limited, the time seems far distant when one who has chosen to fit himself for this profession cannot find a position. Probably but few will care to make this their life work, but to those who do the prospect is good. The work of the stations has just commenced, but already they are recognized as a factor in agricultural progress. The man who comes well equipped to his work can give his time to the investigation of the interesting and complex problems that underlie the science of agriculture. This, to those who choose it, is a constant struggle, a ceaseless endeavor, a continual unfolding. Every success, every problem solved will bring enough of praise and honor to satisfy any man. Other professions offer their peculiar advantages, but to the young man who expects to devote himself to some branch of scientific work, and who chooses to prepare himself thoroughly, few professions offer a more promising field of development than that of worker in an agricultural experiment station.

Tucson, Arizona.

### Climate in the Willamette Valley.

H. T. FRENCH, '85.

The first question which naturally arises in the mind of a person who is studying the geography of any county or locality, is regarding the climate of that particular place. And there is no feature of any locality with reference to which it is more difficult to get reliable information than this. If we consult the average paper of the locality the picture is often too highly colored, because of its real-estate patronage. On the other

hand, if the emigrant who has become discouraged because of some ill luck, and has taken the back trail, is consulted, the picture is dismal beyond the powers of the imagination to brighten.

After a residence in the Willamette Valley of nearly two years, I am of the opinion that there are many advantages of climate existing here over those of many other States in the Union; but even in this beautiful and fertile valley there are some objections to the climatic conditions. One of the most noticeable of these conditions, from an agricultural point of view, is the rainy season. This season is not conducive to the welfare of live stock, unless the stock is provided with proper shelter, and is supplied with some food besides that furnished by the pasture. Stock will *live* on the hills and in the valley all winter without extra food or shelter, but there is a vast difference between living and thriving. It requires four or five years to mature stock when cared for in this way, which with proper shelter and food would mature in two or three years. Hence I think I see a disadvantage even in the comparatively mild winters of the Willamette Valley.

Another pinching time for stock and crops is during the dry season, which prevails through July, August, and all, or at least the larger portion, of September. There is very little green vegetation in sight in the valley or on the foot hills during this period. The farmers are beginning to make the deficiency good by growing some forage crop, such as corn. The silo is coming into use to furnish a means of storing green clover, rye, peas and oats, to feed during the dry season. These two seasons, viz., the wet and the dry, are, to my mind, the greatest objections to the climatic features of the Willamette Valley, and even these have their advantages. The dry season insures the harvesting of grain without damage, and the rainy season produces a vigorous growth of grass for stock; and it is claimed by the

native Oregonian that the rainy weather is very conducive to the health of the people who live in the valley.

Among the climatic features which are an advantage, and assist in making any locality desirable, is the very even temperature which prevails throughout the year. The mean monthly temperature in the valley during the year is from 48 to 55 degrees, with a mean daily temperature of 35 degrees during the coldest month, and 68 degrees during the hottest. Proximity to the sea, where the warming influences of the Japan current are exerted, prevents an extremely low temperature at any time. The sea breeze, which prevails throughout a large portion of the valley during the summer months, prevents the temperature from reaching a very high point, even in the hottest months. The temperature is so uniform that many vegetables will thrive out of doors during the entire winter; cabbage, broccoli, turnips, and during the past winter peas have not been harmed. Potatoes planted last November were not injured, and are coming on very early this spring. Fruit buds are seldom killed by frost, and the oldest inhabitants say that the more hardy fruits never fail to bear. In fact so much faith is placed in the success of the fruit crop that over three hundred acres have been set out to prunes within three or four miles of the college during the past winter. Equally large areas have been set out in other portions of the valley.

At the time of this writing fruit trees of all kinds are in blossom, and grass and grain have a remarkable growth. Much of the winter wheat is two feet in height. Meadow foxtail, sweet vernal grass, some of the broom grasses and orchard grass are heading out. There are many minor features of the climate of the valley which space forbids mentioning. Cyclones are unknown, and thunderstorms are very rare. In short there are few sudden changes of any kind affecting the climatic conditions of the valley.

Corvallis, Oregon, April 25, 1891.



## SCIENTIFIC.

## Natural History Society.

At the meeting of the Natural History Society, April 11, Mr. B. W. Peet read an article on crystallization, illustrating it by the stereopticon. Mr. Peet said:

Crystallization is the process by which the molecules of a substance, which is in the state of a liquid, unite in regular form when it solidifies by cooling or evaporation. If the process is slow and undisturbed the molecules assume a regular arrangement, each substance taking a determinate form according to its natural laws; but if the process is rapid or disturbed the external form may be more or less irregular. The term crystallization comes from a Greek word meaning ice or frozen water, and subsequently transferred to pure transparent stones cut into seals, and, as was thought, only produced in the extreme cold of the lofty passes of the Alps.

It is not wonderful that the beautiful forms, colors and physical properties of crystals attracted considerable attention even in the so-called dark ages. Some of the beliefs of the ancients are quite amusing.

A philosopher of the thirteenth century tells how the cold in the lofty mountains makes the ice so dry that it congeals into crystals. In the seventeenth century a Dane wrote a treatise on crystallization and stated that the origin of crystallization was doubtful but they evidently grew from without by the addition of new layers of minute particles carried to the crystal by a fluid and laid down specially at the ends.

Many theories were advanced shortly after this but none of particular notice until we come to the theory of Linnæus. His notions regarding their formation were very imperfect yet he made many important discoveries that were afterward grounds for other scientists to form a more perfect theory.

Delisle discovered in 1783, that amidst the various forms which crystals took, they did not vary in one thing and that was the angle of incidence or the respective inclinations of the faces to each other. How much he studied the matter may be judged from the fact that he gave 500 regular forms besides the 40 described by Linnæus.

Soon after this Haüy made his celebrated theory of the structure of crystals. He says that in each mineral there exists an integrant or primitive molecule. These molecules are marked in different species by distinct and determinate forms except in a few regular bodies, such as the cube, which do not admit of variation. From these integrant molecules all the various crystals found in each species are built up according to certain definite laws, and thus secondary crystals, as he names them, are produced. The secondary crystal, which covers the primitive form so as to disguise it in so many different ways, he supposed to be enveloping matter made up of a series of laminæ, each decreasing in extent either equally in all directions or only at certain parts.

The great advance secured by the theory of Haüy's was the firm establishment of the idea that the forms of crystals were not irregular but definite and based on fixed and ascertained laws and also "the law of symmetry," that is when any change of a crystal form took place by its combination with other forms, all similar parts, angles, edges and faces were modified in the same way at the same time. He also advanced the theory that different chemicals could be told by the different forms that crystals took.

Weiss, to whom we are indebted for the present theory, discarded the idea of integrant molecules and pointed out for the first time the importance of the axis of crystals. "The axis" he says, "is truly the line governing every figure round which the whole is uniformly disposed. All parts look to it

and by it they are bound together as by a common chain."

The general principles of crystallography are as follows:

1. A crystal is bounded by plane surfaces, symmetrically arranged about certain imaginary lines called axes.

2. A crystal has an internal structure which is directly related to the external form, and the axial lines or directions.

3. The various forms of crystals belong to six systems of crystallization: The isometric or cubical form, tetragonal, orthorhombic, monoclinic or where the vertical axis is inclined to one but at right angles to the other, triclinic or three unequal axes intersecting at oblique angles, and hexagonal.

4. Each species while having a constant axial ratio may still crystallize in a variety of forms; an example is seen in the diamond.

5. The physical characters of crystals have a direct relation to the forms and axes.

6. The angles of the crystals of a species though essentially constant are subject to small variations.

Twin or compound crystals sometimes form. While twin crystals form when circumstances are favorable, in other cases the solidifying material becomes an aggregate of crystalline particles.

Crystallization may take place from solution; from long continued heat without fusion; for instance, the heat required to temper steel is far from fusion, yet it allows a change in size of grains throughout the mass. It may also form in any circumstance that favors the combination of the elements of a compound.

Ruskin describes crystallization to little children something similar to the following: He says to the children, "When you ran in from the garden against one another in the passage you were in the state of solution, and gradual confluence; when you got seated in those orderly rows, each in your proper place, you became crystalline. This

is just what the atoms of a mineral do, if they can; whenever they get disordered, they get into order again as soon as maybe." In answer to how the atoms arranged themselves in regular order, he explained to them by supposing a pile of bricks lay on the ground in the state of confusion. Now if a fairy should come along and say "bricks, go to your places," and the bricks formed a splendid mansion, it would be an illustration of how crystals are formed. The atoms are the bricks, nature the fairy, and the crystals the splendid mansions.

The remainder of the evening was occupied by Prof. Woodworth, who illustrated Edison's phonograph to the entire satisfaction of his audience. Several popular songs and airs were reproduced, after which President Clute recited a poem into the machine, and this was successfully reproduced a few minutes later. As a last number on the list the college yell was given, which made such an impression on the phonograph that it responded with almost as much enthusiasm as was manifested by the audience.

The new catalogues are receiving a great amount of work and thought just at present by the faculty. Several needed changes will be made in the courses. The catalogue is to be illustrated by numerous views of the buildings and scenery of our college.

Thursday, April 30, a committee of the different colleges of Michigan which belong to the M. I. A. A. held a meeting at Eaton Rapids. The committee consisted of one member of the faculty of each of the respective colleges. Prof. Kingsbury Bachelder represented Hillsdale College, Prof. H. D. Wild, Olivet College, Dr. F. M. Taylor, Albion College, and Secretary H. G. Reynolds, M. A. C. The object of the meeting was to devise the best plan for having the faculties represented in the counsels of the M. I. A. A.

The following societies have elected officers for the summer term: Hesperian, president, D. N. Stowell; vice-president, H. N. Peck; secretary, V. J. Hooper; treasurer, H. M. Goss. Union Literary, president, A. R. Locke; vice-president, L. Burnett; secretary, E. J. Hale; treasurer, C. S. Goodwin. Olympic, president, H. W. Mumford; vice-president, G. W. Davis; secretary, V. J. Willie; treasurer, F. S. Payne. Phi Delta Theta, president, V. H. Lowe; secretary H. D. Baker; treasurer, R. C. Bristol. Eclectic, president, K. L. Butterfield; vice-president, G. A. Waterman; secretary, A. T. Stevens; treasurer, C. L. Clark.



# THE SPECULUM.

PUBLISHED MONTHLY DURING THE COLLEGE YEAR,  
BY THE STUDENTS  
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AGRICULTURAL COLLEGE, MAY 10, 1891.

THE action of the Faculty in excusing the students from drill, that they might have time for training in athletics, seems to be thoroughly appreciated by most of the boys. And now our fellows have small excuse if they do not do credit to themselves at the June field day. M. A. C. students have always been under the disadvantage of lack of time for training. Considering this fact, they have done wonderfully well in previous years. But our sister colleges are this year working hard for success. We must do the same. Fellows, do your best. Let not the fame of our college in athletics be tarnished by any fault or weakness of yours when the test comes.

It must be wonderfully interesting to those who drive upon the grounds Sunday

afternoon to witness the interest which their appearance incites in the minds of many. Immediately the grating of wheels is heard, a group of eager faces besieges each window in the hall, and eager eyes peer at the occupants of the carriage. No doubt our friends, the visitors, pity the spectators of their pleasure and excuse them on grounds it were not best to mention. Would two hundred "co-eds" tend to remove this source of annoyance to visitors? Who will answer?

THE college rules are about ready for distribution. With them will be published the constitutions of the Student's Government, Students' Organization, and the Club Boarding Association. Also there will be printed in the same volume, the organic law of the institution, and such later laws, State and National, as have had an important bearing upon the college. All this matter will make a pamphlet of some fifty pages, and will be a valuable document for all friends of the college to possess.

IN looking over the rules we have but little to criticise, and if we had, it might not be best to anticipate. There are a few minor rules, however, that seem hardly worthy a place in the government of a body of college men. We will not incur the responsibility of such rules being broken by mentioning them in a detractory way. We would say this, however, that every rule ought to be enforced. No matter how small a matter it may be, if an unenforced rule stands in a college publication, it weakens the government. Nearly every college has a mass of rules that help advertise the merits of the school to trusting parents, but of whose very existence a third of the faculty and nine-tenths of the students are usually unaware. We hope that no such condition of things will be able to exist here.

INASMUCH as there seems to be a sentiment in the faculty looking toward con-

siderable changes in the course of study, we take the liberty of presenting our ideas upon a portion of the subject. The following is a program simply for the Senior year, Agricultural course:

SENIOR YEAR.

*Fall Term.*

- 8-9, Ag. Engineering.  
Zoology.
- 9-10, English History and Constitution.
- 10-11, German or French.
- 9-11, Zoology—laboratory work, 10 weeks.
- 11-12, Veterinary Science.  
Psychology.
- 1-3, Chemical Physics, 10 weeks.
- 2-4, Veterinary Dissection, 2 weeks.
- 3-5, Zoology—laboratory work, 10 weeks.  
Bacteriology, 10 weeks—lectures and  
laboratory work.
- 1-5, Labor.

*Spring Term.*

- 8-9, American History and Constitution.  
Civil Engineering.  
German or French.
- 9-10, Meteorology,  $\frac{1}{2}$ . Horticulture,  $\frac{1}{2}$ .  
English Literature.
- 10-11, Geology.  
Moral Philosophy.
- 11-12, Veterinary Science.
- 1-3, Chemistry. Experiments.
- 3-5, Horticulture. Laboratory work, 1 hour,  $\frac{1}{2}$   
term.  
Veterinary. Laboratory,  $\frac{1}{2}$  term—dissections  
etc., 2 hours per day, 1st half of term.  
Original researches in Zoology, Entomology,  
Botany, Bacteriology, 2 or 5 days per week.
- 1-5, Labor.

*Summer Term.*

- 8-9, American Literature.  
Military Science.
- 9-10, Political Economy.  
German or French.
- 8-10, Botany or Forestry.
- 10-11, Agriculture.
- 11-12, Veterinary Science.  
Astronomy.
- 1-3, Chemistry.
- 3-5, Original researches as in spring term.
- 1-5, Labor.

Nine weeks advance in summer term, examinations over by the Tuesday before the baccalaureate sermon.

Drill in all terms as at present.

Two hours of laboratory work count as one hour, except chemical physics, which counts eight hours per week. Drill counts two hours per week. Seventeen

hours per week required with drill, twenty without drill.

It will be seen that the principal changes are in giving a course in English and American History and Constitution; a course in English and American Literature; German or French; ten hours a week of laboratory work in Zoology; a course in Bacteriology; a full term of Geology; an additional term in Agriculture; opportunity for original research. A critic may say we have excluded labor. By no means. There is left a chance for two or four hours each afternoon in any work the student and professor determine upon. It might be the charge of certain crops for the year, or a portion of it; it might be library work on leading questions in agriculture.

By this arrangement the student desiring largely a literary course could elect it. The student who wished a purely scientific course could take it. A man who intended to follow farming, gardening, fruit raising, bee keeping, floriculture, could spend the entire year in the most practical preparation for it, giving, if he wished, as much as four hours a day to such work. The first three years of the course should not be elective, but when a man arrives at his Senior year, it is useless and unwise to hamper his ambitions by confining his efforts.

The merits of this arrangement speak for themselves. There are no doubt demerits, and each reader will discover them for himself. At best this program is only suggestive. Yet we trust it may be of value to those interested in our course.

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COLLEGE NEWS.

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Any one having a copy THE SPECULUM, No. 37, June, 1889, to dispose of, will please notify Mr. J. C. Hinkson.

The State Board of Agriculture met Monday night and Tuesday of last week.

The entrances to many of our buildings have been much brightened by paint.

There are nine students in college this term who are sons or daughters of former graduates.



Prof. F. S. Kedzie is expected home about May 15.

A general house cleaning day is a long felt want of the boys.

Inspection of the cadet corps took place Monday, May 4, at one o'clock, P. M.

L. A. Clinton recently visited his home in Grand Rapids, where he enjoyed a ten days' vacation.

Dr. Grange has been appointed to take charge of the experiment station veterinary department at the World's Fair.

Thomas Gunson, of Saginaw, has been engaged to oversee the work done on the lawn and drives the present season.

Messrs. A. B. Cook, C. T. Cook, L. A. Clinton and C. B. Cook were in Owosso, Sunday, April 19, eating maple sugar with friends.

Prof. Davenport, in company with Mr. Glidden, spent a few days recently at the Baldwin, Walton and Grayling experiment stations.

Prof. L. R. Taft attended a horticultural meeting at Hart, and made a visit to the Grayling Experiment Station during the last days of April.

The chemical department is in receipt of a large number of samples of fertilizers, which are to be subjected to chemical analysis in the near future.

Two bulletins will soon be issued, one by Prof. Cook and G. C. Davis on Kerosene Emulsion, Some New Insects, and one by Dr. Grange, on Foot Rot in Sheep.

Arrangements are being made for the Summer School, and from numerous applications that have already come in we should predict a still larger attendance than last year.

A horse belonging to Mr. Munn has been under electrical treatment for about two weeks. The disease is Azoturia, a condition which is often very obstinate and slow to yield.

President Clute, while in Ann Arbor seeking a bacteriologist, Saturday, April 18, was much gratified to learn of the good work that is being done by former students and graduates of M. A. C.

The senior class in civil engineering went to Pine Lake, Thursday, April 30, to triangulate the lake. They finished their work Saturday noon, and returned to college, a happier and a wiser class.

A few of the boys could not resist going down town last Tuesday night, but the "Temptations" at the opera house did not seem to trouble them as much as their "reception" at the Hudson House.

P. G. Holden has been at his home in Oviatt for the past two weeks. He was called there by the sickness of his mother, who was stricken down by paralysis. She has been dangerously ill, but is now reported as improving.

Prof. Davenport and Mr. Clinton will leave soon for a visit to the experiment stations in the northern part of the State. Mr. Clinton will spend the greater part

of the season laboring in the interests of the experiment stations connected with the college.

The geology class, accompanied by a few seniors and ladies of the college, spent Saturday, April 25, at Grand Ledge. The class in geology of Olivet College also spent the same day there. All had an enjoyable time, or, at least, were happy to get back on M. A. C. grounds.

Two hundred and ten bound volumes and twenty-five unbound volumes have been added to our library by purchase, and ten volumes have been presented during the last month. These books are principally works on education adapted to students who teach winter schools.

C. F. Baker recently took from the muscles of a sun-fish caught in Cedar River, a large number of mature fluke-worms. The adult fluke is often found in the liver, kidneys, and various other organs of the anatomy of many animals, but there seems to be no account of its existence in the muscles previous to this discovery.

The Farm Department has recently received some excellent samples of wool of the Merino breeds from H. R. Dewey, of Grand Blanc, and W. E. Boyd, of Delhi Mills; of Shropshire from F. B. Mumford, Moscow, Mich.; of the the Leicestershire from John Kelly, Shakspeare, Ontario, and of the Lincoln from Wm. Oliver.

An abnormally developed common water snake (*tropidonatus sipedon*) was dissected a few days ago in the zoological laboratory. The stomach was found to contain three fish. The largest one was about six inches in length, and had evidently been captured by the snake in the fish's effort to capture another small fish, about three inches in length.

Dr. Hunting, ex-president of Alma College, lectured in the chapel, Friday evening, April 3, subject, Pictures and Parables. Every one present was convinced that Dr. Hunting is a man of scholarly ability. Another interesting lecture was given by Dr. Butterfield, president of Olivet College, Friday evening, May 1. His subject was William Tyndall. There was a good attendance at both lectures.

Dr. Beal offers four prizes of one dollar, seventy-five, fifty and twenty-five cents to undergraduates of the college who will prepare and mount for him in the best manner, specimens of hepatica, basswood, mandrake, shepherd's purse or sugar maple, the same to be ready by August 1, 1891. No one can compete for more than one prize, and he reserves the privilege to withhold the prizes in case the specimens are unworthy.

The following books will be used in the senior literature class next term: Franklin's Autobiography, Irving's History of New York, Hawthorne's Scarlet Letter, Longfellow's Evangeline, Bryant's Ulysses, Whittier's Snow Bound, Lowell's Vision of Sir Launfal, Emerson's Essays, Thoreau's Succession of Forest Trees, Bayard Taylor's Lars, and Howells's A Year in

a Venetian Palace. In senior rhetorical class the class will study books I and II of Milton's Paradise Lost.

The union meeting of the societies and fraternities of the college occurred Friday evening, April 24, at which the following program was listened to by a large number of the students and faculty: Poem, A. C. Sly, of the Union Literary Society; Scientific Essay, C. F. Baker, of Phi Delta Theta; Oration, H. W. Mumford, of the Olympic Society; Parody, W. D. Groesbeck, of Delta Tau Delta; Prophecy, D. W. Stowell, of the Hesperian Society, and a college paper by George C. Monroe, of the Eclectic Society. Two selections of music were rendered by the college orchestra.

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## PERSONALS.

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We desire the earnest co-operation of every person who has ever been connected with the college in trying to make this department an interesting one. Let every alumnus and every person who has been with classes here send in news to the editor of this department, often, thus making his work much easier and the department more interesting to all.

Prof. E. J. MacEwan, of Madison, Wisconsin, proposes visiting Europe this summer.

'62.

E. M. Preston has sent a large geological collection of minerals to the college museum. This is his second valuable collection given to the college.

'69.

Richard Haigh is no longer Deputy Oil Inspector at Kalamazoo. Cause, indirect effect of last fall's election.

C. E. Bessey is one of the five botanists of the United States, appointed to investigate into physiological problems in botany, and to report the result at the annual meeting of American scientists.

'74.

C. L. Bemis, Superintendent of Ionia County Schools, has been engaged as superintendent of the Ionia high school.

There is an article published in pamphlet, which is re-printed from the Medical Journal of August 9, 1890. The subject is "The Cause and Remedies for Suits for Malpractice," read by Dr. F. J. Groner, of Grand Rapids, before the medical society last fall. It is an able article, and being published in pamphlet form, will enable all interested to read and learn its merits.

A. S. Hume is supervisor of Lansing Township, Ingham Co. So say the people thereof.

President C. L. Ingersoll, of the Colorado Agricultural College, has resigned his office to accept the chair of Agriculture in the University of Nebraska.

'75.

C. I. Goodwin, at the April election, was elected supervisor of Orange Township, Ionia county, by the Republican party.

Robert Caine, who has been in the mining business in Colorado, is home at Battle Creek, hustling the real estate business. From all appearances he is distancing other real estate men of the city. He has succeeded in getting the common council to lay out the first boulevard of the city, a mile long, and extending in front of his farm.

D. C. Postle is dealer in all kinds of lumber, drain tile and coal at Galloway, Ohio. His prospects are good. He has established a trade peculiarly gratifying to himself. He manufactures tile on the large scale, and has an exclusive trade in coal and lumber.

'76.

Wm. Caldwell, one of Oakland county's best farmers, made a short visit to the college recently. He has recovered from that close call of his last fall, of being chosen State representative.

'77.

A. B. Simonson, practicing physician and surgeon for the Calumet and Hecla Mining Company, is in a prosperous way of business. He reports good health, pleasant work and plenty of it.

'78.

G. E. Breck will soon visit England for the purpose of importing another lot of Shropshire sheep and Cleveland Bay horses.

C. J. Strang, editor of the *Michigan Agriculturist*, in Lansing, has moved to Olivet.

'81.

L. B. Hall, of the Belding high school, has been re-engaged as principal for the coming two years. What more could better convey to us the fact that Mr. Hall has those friends in Belding who appreciate his efforts.

A. H. Voight is interested in an exhibition of fruit from Lower California, to be held in Chicago soon. The exhibition will later in the season be taken further east.

'82.

W. H. Coffron has been appointed by "Uncle Sam" to the pension department at Washington, salary, \$2,400. He is also instructor in chemistry in the University of Georgetown.

T. F. Millspaugh is in a good plump condition. He has a smooth face and a jovial expression. Why? He is a successful farmer at Lyons, Mich.

'83.

W. S. Kedzie is recuperating in Washington.

F. F. Rogers read a paper at the Marlette Institute last winter. He is now moved from Marlette to Port Huron, where he continues his business as civil engineer.

'84.

Alice A. Johnson is stenographer for the Lansing Building and Loan Association.

W. A. Gage and wife paid the college a visit a short time ago.



'85.

A bouncing boy, one and a half months old, to H. T. French and wife of Corvallis, Oregon.

J. W. Matthews, principal of the Grand Rapids high school, will be at M. A. C. to attend the summer normal.

E. R. Lake is Secretary of the Horticultural Society of Oregon.

H. E. Thomas has opened a law office in the post-office block in Lansing. He was recently elected circuit court commissioner.

'86

E. A. Whitney, a successful lawyer and newspaper editor in Frankfort, Mich., visited the college this spring.

Wm. R. Rummler is practicing law in Chicago, corner Lake and Clark streets.

'87.

Married in Chicago, March 31, 1891; Minerva Wilkinson, of Clifford, Mich., and W. E. Sanson. Home, Glenwood, Ill., where Mr. Sanson is superintendent of an industrial farm for boys.

O. C. Wheeler was elected treasurer of Lansing township, Ingham county, this spring.

W. W. Diehl will take the degree of Ph. D., at Garrett's Biblical Institute, in June.

H. W. McArdle has received an appointment as assistant in botany in the North Dakota Agricultural College.

'88.

A. B. Cordley on April 10th took the special civil service examination for a position in entomology in that department at Washington.

G. L. Teller, of the Industrial College of Arkansas, reports lively and agreeable times. From the institution there have lately been several resignations. Fellows, keep one eye open.

Dale Smith has lately returned from Montana, and now proposes going into the mercantile business in Portland, Mich. Dale surprised his friends at the college by giving them a short Sunday call.

Paul M. Chamberlain was married in Chicago, April 23, to Miss Olivia Langdon Woodward, daughter of the late Rev. Dr. and Mrs. Geo. Wheelock of that city. While taking a course in mechanical engineering at Cornell University, N. Y., he met Miss Wheelock who was pursuing a course in landscape gardening. The bride is a descendant, on her father's side, through ten generations, of Miles Standish. Her ancestry on her mother's side are no less remarkable. Mr. and Mrs. Chamberlain will reside in Waynesborough, Pa.

WITH '88.

Hamlin R. Case is chief officer and manager of a railroad company. Office, 1123 Douglas street, Sioux City, Iowa.

'89.

L. A. Clinton, assistant to the director of agricul-

tural experiment stations of Michigan, will spend considerable time this spring and summer upon the northern stations.

Frank Seibert is at the Worcester Medical College, in Cleveland, where he will graduate in June.

B. K. Canfield will return from Europe, where he is studying art, and anticipates spending much of his time at his Alma Mater.

E. G. Lodeman takes Mr. Munson's place at Cornell University, N. Y., as assistant in horticulture. "Lodie" has interesting work and understands how to accomplish a great deal of it.

Married, Monday evening, March 23, 1891, Corinne M., daughter of Mr. and Mrs. Wm. E. Aldrich, of Harrison, to F. N. Clark. They were married at the residence of the bride's parents, and have made their home at Ludington, Mich., where Mr. Clark is employed as billing clerk in the T. & R. M. R. R. dock office. Says F. N., "success to M. A. C." Says M. A. C., "ditto to him."

Alex. Moore is in a law office in Port Huron. When last seen by a friend of his he held a blank divorce bill in his hand and was seeking for a woman.

'90.

J. R. McColl will spend the summer at M. A. C., studying. He is now at the University of Tennessee at Knoxville, engaged as instructor.

Thomas McGrath was elected township treasurer by the republican party at the April election. There must be quite a change in Tom's political tactics since the M. A. C. Cleveland Club followed his leadership to Lansing, the occasion being a democratic "blow-out."

W. W. Morrison will take a trip west this summer with the U. of M. Glee Club.

WITH '91.

H. B. Fuller finishes teaching district school in one month, and then will start for the east, where he begins the pleasures (?) of West Point life.

W. J. Graves can be seen almost any day busily employed in the city of Adrian.

WITH '92.

E. P. Hulburd is electrical engineer, 939 Wilson Avenue, Cleveland, Ohio. He has lately been at Rochester, N. Y., repairing electrical railway generators.

Chas. Nichols finds a pleasant and profitable situation in Michigan's State-house.

L. B. Plummer is employed as assistant in the department of agricultural science of the Maine Agricultural College.

*Books received*—Civil Government of the United States. By W. C. Hewett. Complete, 108 pp., cloth, 25 cents. H. R. Pattengill, Lansing, publisher. This is, in form, a brief commentary on our Constitution, suited to younger students. In substance it is a valuable little book for any citizen.

## COLLEGES.

Yale has a Japanese professor.

The Government is building a \$100,000 gymnasium for the West Point students.

America has 360 universities and colleges, 4,240 professors, and 69,400 students.

Six hundred and fifty students are considered as a small entering class at Oxford.

The Michigan University has seventeen graduates in congress. Harvard has sixteen and Yale eleven.

The number of books in the college libraries of the United States has been estimated at 3,000,000.—*Ex.*

The attendance of students at Berea college last year was made up of 198 colored and 157 white persons.

The number of elective courses opened to the academic Juniors and Seniors of Yale are one hundred and nineteen.

Dartmouth claims to be the originator of college journalism, Daniel Webster being the first editor of such a paper.

The University of Michigan is represented by every State in the Union but three; and also by twelve foreign countries.

Professors above sixty-five years of age and having served fifteen years at Columbia College, are retired on half pay.—*Ex.*

The University of Texas is provided with an endowment of over 2,300,000 acres of land, besides half a million dollars in bonds.

## EXCHANGES.

The Central College *Gem* contains a very suggestive article on "Tears, Idle Tears."

The *Acta Victoriana* has quite a lengthy article on "Manliness," worthy of careful perusal.

"The Child is Father to the Man" is a most instructive article of the Notre Dame *Scholastic*.

"Reading maketh a full man." We wonder whether this can be applied to the readers of the Exchanges and Colleges.

"*The Campus*" gives its Exchange and College department its proper place. The Exchanges are given their due merits and comments. The extracts taken contain the gist of the important articles so as to get the exchange reader to think.

Extemporaneous speaking is sadly neglected among our colleges and universities. We would suggest that more of an effort should be made to have it a special feature in our rhetorical societies. There is no other feature so important as this. It cultivates precision, ease and intelligence.

We quote the following commendable editorial from the *Illini*:

"A man's worth is measured not by the record he

makes when all circumstances are favorable to the accomplishment of his ends, but by the spirit he manifests when his horizon is darkened by threatening clouds, when the once rosy morning has turned into the blackest night. When left alone, he is obliged, unaided, to contend with the great problems and mysteries of existence which appear to grow more and more numerous and formidable as he comes into more direct contact with the realities of life. Many of us get on smoothly and seemingly with great success but the moment we come to a point where determination, persistence and will power are required, we become utterly powerless, unable to accomplish anything ourselves, and incapable of being utilized by those who would make use of us. We encounter a study that is difficult and immediately give it up in despair where if we had made an effort we would have succeeded. Independence, courage, manliness, should ever be ours."

EIN HELDENLIED.

He held her hand, she held his hat,  
I held my breath and lay right flat;  
They kissed then;  
I saw them do it.

He held that kissing was no crime,  
She held her head up every time,  
I held my peace and wrote this rhyme,  
And they  
Thought no one knew it.—*Beholden.*

## ATHLETICS.

### FOOT BALL.

Friday afternoon, the 17th of April, the Olivet and M. A. C. foot-ball teams contested at the base-ball park in Lansing. The M. A. C. boys played a good game considering the time they had trained, but the Olivets had considerably the best of the contest, owing to their superior skill. The features of the game were Stowe's rushes, Ferry's running, Wright's guarding, and Frost's and Mulheron's tackling. The score was 72 to 0, in favor of Olivet. Saturday, May 2, our boys played a return game with the Olivets on their grounds. The game resulted 78 to 0, in favor of Olivet.

### BASE BALL.

The base ball season has opened here good and early, which shows that the boys are intending to make a determined fight for the championship this year. Their first game was with the University team, April 18. The game was not exciting, and devoid of any special features except our boys' inability to hit the ball, and the battery work of both sides. Score:

	1	2	3	4	5	6	7	8	9	R.	BH.	E.
U. of M.....	1	1	0	1	2	0	1	0	4	10	12	5
M. A. C.....	0	0	0	0	0	0	0	0	0	0	4	7

Batteries—Robinson and Abbott, Burnett and Wilson. Umpire—Seymour.

April 25 our boys played a return game with the U. of M. team at Ann Arbor, hoping they would redeem



themselves, but their hopes were not fully realized, as the score will show.

	1	2	3	4	5	6	7	8	9	R.	BH.	E.
M. A. C.....	1	0	0	0	0	0	0	1	2	4	12	14
U. of M.....	2	3	1	4	2	5	1	0	8	26	*	2

Batteries—Burnett and Wilson, Codd and Walsh.  
Umpire—Seymour.

The Athletics of Lansing, and the M. A. C. teams played ball at the Lansing ball park May 2. The features of the game were Burnett's fine pitching and Gibbs's terrific batting (?). Score :

	1	2	3	4	5	6	7	R.
Athletics.....	0	0	1	0	2	0	*	3
M. A. C.....	2	0	0	1	10	5	5	23

Batteries—S. Smith and A. Smith, Burnett and Wilson. Umpire—W. Clute.

FIELD DAY.

The M. I. A. A. committee held its first meeting in Jackson at the Hibbard House, Saturday, April 11, and elected the following officers: President, O. T. Bolt of Hillsdale; vice president, C. E. Barr of Albion; secretary, W. Brooks of Olivet; treasurer, A. C. Sly of M. A. C.

It was moved and carried that field day be held the 4th, 5th and 6th of June. The following rules were then adopted.

Rule I. All entries shall be in the hands of the secretary a week before field day begins.

Rule II. No person can be a contestant who has not been a student enrolled in one of the colleges of the association, within a year previous.

Amendment to Rule II. Each contestant must bring a certificate from the president of his college or principal of department certifying his connection with the institution according to rule II.

Rule III. Any contestant forfeits his rights in the contest who is not on the ground when the event is called, provided the event is called according to program.

Rule IV. But three entries may be sent to the secretary by each college in any given sport. Only the two first named may become contestants, except one of them shall, either through sickness or injury, be unable to participate.

Rule V. The limits for weights in boxing and wrestling shall be as follows:

Feather weight, 120 lb. and under; light weight, 120 lb., 140 lb.; middle weight, 140 lb., 160 lb.; heavy weight, 160 lb. and over. A tax of \$200 was then levied to be apportioned according to the number of male students in the different institutions, certified by the secretary or president of each institution.

ALL-AROUND CHAMPIONSHIP.

The method of determining the all-around championship has been changed and the prize will be awarded according to the customs in eastern associations. Candidates for the championship must qualify in seven out of the ten following sports:

Wrestling, sparring, standing broad jump, 8½ ft.; running high jump, 4 ft., 9 in.; 100 yards dash, 11½ sec.; 440 yards dash, 62 sec.; hitch and kick, 7 ft.

throwing base ball, 285 ft.; throwing hammer, 55 ft.; 100 yards hurdle race, 22 sec.

The qualifications of each contestant in wrestling and sparring will be decided by two judges and the referee. Each first prize in these ten sports counts five points for the winner toward the all-around championship, providing he is a qualified contestant. Second prize counts three, and third one. However, if the contestant is not qualified, his record in any one sport will not be considered in determining the championship.

The following is the program for field day:

THURSDAY AFTERNOON.

Foot-ball, - - - M. A. C. vs. Olivet.

THURSDAY EVENING.

Reception.

FRIDAY MORNING, 8 O'CLOCK.

100 yards, dash,	-	-	-	Silver medal
Throwing hammer,	-	-	-	" "
Putting shot,	-	-	-	" "
Safety race, 880 yards,	-	-	-	" "
Broad handspring jump,	-	-	-	" "
High handspring jump,	-	-	-	" "
High somersault,	-	-	-	Memento.
50 yards backward dash,	-	-	-	"
Standing hop, step and jump,	-	-	-	Silver medal.
Running hop, step and jump,	-	-	-	" "

10 O'CLOCK.

Lawn tennis—doubles,	-	-	-	{ M. A. C.—Olivet. Hillsdale—Albion.
Base ball,	-	-	-	Albion vs M. A. C.

FRIDAY AFTERNOON, 1:30 O'CLOCK.

Tennis—singles,	-	-	-	{ M. A. C.—Albion. Olivet—Hillsdale
Pole vault,	-	-	-	Silver medal
Standing high kick,	-	-	-	" "
Running high kick,	-	-	-	" "
Hitch and kick,	-	-	-	" "
Kick, both feet,	-	-	-	" "
Half mile run,	-	-	-	" "
Standing broad jump,	-	-	-	" "
Running broad jump,	-	-	-	" "
Standing three jumps,	-	-	-	" "
440 yards bicycle race,	-	-	-	" "
Fancy bicycle contest,	-	-	-	" "
220 yards hurdle race,	-	-	-	" "
Base ball, winners,	-	-	-	Pennant.

FRIDAY EVENING.

Wrestling—catch as catch can.

Feather weight,	-	-	-	Silver medal.
Light weight,	-	-	-	" "
Middle weight,	-	-	-	" "
Heavy weight,	-	-	-	" "
Fencing exhibition,	-	-	-	Memento.
Horizontal bar,	-	-	-	Silver medal.
Indian club swinging,	-	-	-	" "

## SATURDAY FORENOON, 8 O'CLOCK.

Base ball, losers,	-	-	2d place.
Tennis, doubles, winners,	-	-	Silver medals.
120 yards hurdle race,	-	-	Silver medal.
Mile relay race,	-	-	
Tug of war	{ Hillsdale—Olivet. M. A. C.—Albion. }	winners,	Cup.
Three legged race,	-	-	Silver medals.
Standing high jump,	-	-	Silver medal.
Running high jump,	-	-	" "

## SATURDAY AFTERNOON, 1:30 O'CLOCK.

Tennis, singles, winners,	-	-	Silver medal.
Mile bicycle race,	-	-	" "
440 yards dash.	-	-	" "
Base ball throw,	-	-	" "
Passing rugby,	-	-	" "
Kicking rugby,	-	-	" "
Foot ball, Olivet vs. Albion,	-	-	Cup.

## NOTES.

All those wishing to attend field day at Olivet should hand in their names to our representative, Mr. Sly, before the beginning of next term, so that they may be provided for.

At the last meeting of the M. I. A. A. committee in Jackson, April 25, it was decided to secure M. C. Murphy of the D. A. C. as referee.

R. E. Brackett has secured the contract for making the medals this year. Mr. Brackett made them for the last field day and gave excellent satisfaction.

The A. A. U. rules were adopted by the association to govern all sports this year.

Each college in the association will not put a gold medal on its particular sport as heretofore. The four sports on which the gold medals will be placed are to be decided by the M. I. A. A. committee.

J. A. Collins, instructor in the D. A. C., was secured by our field day management to give the boys instruction, during the week beginning May 4. He refereed the contests in the local field day, and was prevailed upon to take part in some of the indoor sports. He is undoubtedly the best athlete, besides being a good instructor, in the northwest and we should feel ourselves fortunate in securing him.

## LOCAL FIELD DAY.

The M. A. C. annual field day was held in Lansing, Saturday, May 9. The indoor sports took place in the armory the evening of May 8, consisting of sparring, wrestling, fencing, bar performance, high kicking, etc. Saturday, at Washington Park, the outdoor contests in running, jumping, hurdling, etc., took place. There was a game of base ball between the M. A. C. and M. A. A. teams. This field day was held for the purpose of deciding the ones who shall represent us in the contests at Olivet. The paper went to press before complete results could be secured.

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