per statute acre is :—7½ stones of vetches and 5 stones of rye or wheat.

No matter how liberally autumn sown catch crops have been manured, it is very essential, if early cutting is desired, to apply nitrate of soda in spring. From 6 to 8 stone of this manure, per statute acre, should be sown in the first week of February, and a similar dressing applied three weeks later.

If each of the four previously mentioned crops are sown in the manner indicated on a stubble following winter sown grain, the hardy green turnips will generally be fit to cut by 17th March ; the giant rape by 1st April ; the rye by the 10th or 15th of the same month, and the vetches by about 1st May.

Summer Catch Crops.

Italian Rye-grass is an admirable crop for providing green fodder during summer and autumn. Only those with experience can realise what an enormous amount of food can be obtained from this crop when suitably manured.

As a general rule, Italian rye grass is sown with a manured corn crop, e.g., oats after potatoes or roots. In this case the crop should receive either several dressings of liquid manure after the corn is harvested, or, failing this, 4 cwt. of superphosphate and 2 cwt. of kainit per statute acre in October. Early in February an application of 1 cwt. of nitrate of soda per statute acre should be applied, and the dressing repeated in early March, if very early cutting is desired. If the two dressings of nitrate of soda are given, the crop will be quite ready to cut by the middle or end of April. When the crop is being cut, if 1 lb. of nitrate of soda to the square perch be given, or the land is dressed with liquid manure, the crop will be ready for a second cutting in six or seven weeks. By repeating the dressing of nitrate of soda or liquid manure after each cutting, three, and sometimes four crops of Italian rye grass can be obtained in the season.

The cost of such a liberal use of artificials is undoubtedly high —from £4 to £5 per statute acre—but it must be remembered that one acre of Italian rye grass treated as described will easily replace four acres of even very good pasture ; and on account of the cattle being house-fed in summer, a good heap of farmyard manure will be produced for use on autumn sown catch crops.

It is not generally known that Italian rye grass can be successfully sown with a lea oat crop, provided the lea land is well tilled and a complete mixture of artificial manures is sown with the oats. This latter method has come very much into vogue during recent years in County Limerick ; the plan being to sow half the lea oat "break" with Italian rye grass, stook or hand-stack the oats on

this portion of the field as soon as cut, and sow the rest of the stubble immediately with catch crops for spring use.

Italian rye grass sown in this manner is sometimes kept to provide several cuttings throughout the summer, or perhaps it is cut once, and the land broken up and sown in the month of June with hardy green turnips or giant rape to provide winter feeding. It is important to remember, however, that Italian rye grass sown with lea oats should be liberally dressed with dung immediately the grain crop is harvested. If the crop is intended for continuous summer cutting, the dressing of nitrate of soda or liquid manure previously mentioned should be used. If only intended to be cut once, the February and March dressing of nitrate or liquid manure only need be used. Italian rye grass can also be sown after early potatoes have been dug.

After such a crop the rye grass is best sown with a little giant rape, the land being simply levelled with a harrow, the rape and rye grass seed broadcasted and covered with a roller. Giant rape sown in July will be fit to cut in September, and the rye grass in the following April, and very often, in a favourable season the rye-grass can be cut in November, especially if a little nitrate of soda be sown immediately the rape is cut.

The rate of seeding Italian rye grass varies according to the conditions under which the crop is sown. Provided very good seed is used, three and a half stones of seed per statute acre will be sufficient to sow with a manured oat crop, and 4 stone with a lea oat crop, while after early potatoes, 3 stone of Italian rye grass and 4 lbs. of giant rape will be sufficient.

Other types of Summer Catch Crops.—It sometimes happens that a farmer may not have a suitable plot of Italian rye grass for soiling. He may, for instance, wish to reserve his rye grass crop for hay, especially in a district where "seeds" hay commands a high price; or again, he may wish to let out his new grass land for a number of years. Under these conditions a series of fodder crops could be sown to provide summer "soiling."

A number of crops are suitable for the latter purpose, but for use in the summer months no crop is so nutritious or relished more by stock than vetches. For late summer and autumn feeding, either giant rape, hardy green turnips, or rye grass can be sown.

To provide a continuous supply of vetches from June to the end of August, three sowings should be made; the first in early February, the second in mid-March, and the third at the end of April or early in May.

The cultivation is precisely the same as that of an ordinary oat crop.

There is no need to use farmyard manure for spring vetches; artificials will suit quite as well, and the dung can often be more economically used on some other crop. For spring vetches a complete mixture consisting of 3 cwt. superphosphate, 3 cwt. kainit and 1 cwt. of sulphate of ammonia per statute acre will give good results. The artificials should be well mixed and harrowed in with the seed.

Oats should be sown with spring vetches instead of rye, as the former grain does not so readily become fibrous in hot weather. Eight stones of vetches and the same quantity of oats will sow a statute acre.

Rape and Oats.—If for any reason the third sowing of spring vetches cannot be completed by the end of the first week of May, a mixture of giant rape and oats should be substituted in place of oats and vetches. The cultivation and manuring is practically the same as for vetches, except that nitrate of soda may with advantage replace sulphate of ammonia in the mixture of artificials. The oats should also be sown before the land is harrowed, and the rape afterwards, so that the latter seed will not be covered too deeply.

Seeding may be done at the rate of 9 stones of oats and 5 lbs. of giant rape per statute acre. The rape and oat mixture finds great favour with small farmers; the relative cost of the seed compared with a mixture of oats and vetches often being a consideration.

Hardy Green Turnips and Rape mixed with Italian Rye Grass.—On land from which autumn sown catch crops of vetches or rye have been cut in spring, sowings of hardy green turnips alone, or a mixture of giant rape and rye grass, can be made in June. If the land is liberally manured, two magnificent cuttings from each of the crops can be obtained.

The cultivation and manuring required is the same for each crop. First give the vetch and rye stubble a good "tearing" with a spring-toothed harrow, cultivator or disc-harrow—the latter is the best implement in existence for the quick cultivation of land, especially when "sun-baked." The dung should be spread, the land ploughed and a fine seed-bed prepared. Give, in addition to dung, a dressing of from:—

3 to 4 cwt. of superphosphate,
$\frac{3}{4}$ to 1 cwt. of sulphate of ammonia, and
$\frac{3}{4}$ to 1 cwt. of nitrate of soda,

per statute acre. The artificials to be sown with the last stroke

of the harrow. The seed of hardy green turnips should be sown broadcast at the rate of seven or eight pounds of seed per statute acre. For the giant rape and Italian rye grass mixture, sow five pounds of the former and three stones of the latter. Both crops will be sufficiently covered by rolling once or twice after sowing.

If sown by the middle of June, the giant rape will be fit to cut by September, and if one or one and a half cwt. of nitrate of soda per statute acre or a dressing of liquid manure be applied in early February the rye grass will be fit to cut by 1st April.

The hardy green turnips will be quite ready for cutting in early October, and again in the following March, provided nitrate of soda or liquid manure is applied in February, as recommended for the rape and rye grass crop.

During the first cutting of hardy green turnips care should be taken to leave about two or three inches of the stem above the small bulb, when the intention is to let the crop grow a second time, as it is from this small portion of the stem that the second growth of leaves takes place. On heavy or "sulky" land, where hardy green turnips are grown for a double crop, the seed should be sown in rows on the flat—the same quantity being sown when broadcasting. The rows should be about one foot nine inches apart.

On a favourable day after the first cutting, a cultivator or an ordinary plough with the mould board removed should be run between the rows in order to loosen the soil, check the weeds and start the second growth. An ordinary turnip sower can be used for sowing hardy green turnips in this manner, although it may be necessary to remove the front roller from some machines.

Winter Catch Crops.

Several types of catch crops suitable for winter feeding have already been referred to. For instance, giant rape sown after rye grass cut once, or hardy green turnips, or giant rape and rye grass after vetches cut in spring, may, if necessary, be left over for use in winter.

In practice, however, it is better to use these crops at the times specified, and make special provision for a supply of winter green feeding. With this object in view, stubble land, or, if necessary, manured ground from which potatoes or mangels have been raised, should be sown with vetches in October or November. This crop can be made into either hay or ensilage in the following June, and

the land sown in July with hardy green turnips or giant rape for winter use.

On manured land after potatoes or mangels the ground should be ploughed, the seed broadcasted, covered with a harrow and lightly rolled. In the case of lea corn stubble, first harrow the surface, then cart on the farmyard manure, and plough it in, sow the seed, harrow and roll. If dung is not available, the mixture of artificials recommended for spring sown vetches can be sown with the seed.

A suitable vetch mixture for hay or ensilage is 8 stone of winter vetches, 5 stone of winter oats, and 4 stone of winter wheat per statute acre.

In districts where winter grain crops are not usually sown, isolated crops of vetches are very liable to be damaged by crows, wood pigeons, etc. As a preventive against the attacks of these pests, it is a good plan to sprinkle the vetches and grain with a little liquid tar, and, whilst the seed is moist, mix a small quantity of dusty lime through it.

This treatment checks the germination to a certain extent, and consequently a little more seed should be sown.

The vetch mixture should not be cut before the small vetch pods have begun to form. This stage will generally be reached by about 15th June. The crop is made into hay in the same manner as a crop of rye grass or clover. If the area sown is large and bad weather conditions prevail, when the crop is ready to cut, it may be made into ensilage as described in the Department's leaflet, No. 84. Rye grass may be mixed with it for this purpose.

Immediately the land is cleared it should be broken up, well tilled, and half the land sown with hardy green turnips, and the other half with giant rape, in the same manner as described previously. The giant rape sown for winter consumption should not be mixed with rye grass, but sown alone, at the rate of six or seven pounds per statute acre.

If the previous vetch crop has been manured with a heavy dressing of farmyard manure, artificials alone may be used on the hardy green turnips, and giant rape. A suitable dressing per statute acre is :—

3 to 4 cwt. superphosphate,
$\frac{3}{4}$ to 1 cwt. sulphate of ammonia,
$\frac{3}{4}$ to 1 cwt. nitrate of soda.

In addition, on light land, from 2 to 3 cwts. of kainit per statute acre may also be profitably applied.

If the hardy green turnips and giant rape are sown by the first week of July in the manner described above, a continuous supply of green feeding will be available from November on through the winter. In a mild season the hardy green turnips cut in November may often be cut a second time in the following March or April, especially if nitrate of soda is applied in February.

Systems of Catch Cropping.

As will be readily understood, many systems of catch cropping can be devised according to local circumstances. The undermentioned plan is one which has been found very suitable for dairying districts in County Limerick where a continuous supply of green feeding is required throughout the year.

As a general rule, there is not much difficulty in growing spring catch crops between two ordinary crops in rotation, especially when winter oats are sown on the lea land to be followed in the second year by potatoes and root crops. The system of catch cropping given in the table following herewith necessitates, however, the extension of the rotation by one year, that is to say, roots and potatoes should be grown in the third instead of in the second year.

In districts where a lack of skilled labour exists, or soil and climate conditions are unfavourable to the growth of root crops, a rotation could be carried out in which vetch hay followed by giant rape and hardy green turnips could take the place of the root crop. The former type of crops, viz., vetch hay, rape and hardy green turnips, can often be grown with considerably less risk and cost than turnips and mangels.

In a brief article of this description it is not possible to exhaust the important subject of catch cropping. The relative cost of producing catch crops; their comparative feeding values compared with ordinary crops and purchased feeding stuffs; the most economical way of feeding catch crops; are all matters pregnant with interest to the farmer.

[Table.

* PLAN OF CATCH CROPPING THREE ACRES OF WINTER OAT STUBBLE, TO PROVIDE GREEN FEEDING THROUGHOUT THE YEAR.

Area Sown Statute Measure	Crop	Month Sown	Crop ready for Cutting	Subsequent Crop	Month Sown	Crop ready for Cutting
A 1 rood	Hardy Green Turnips	August	March and April	Spring Vetches and Oats, or Giant Rape and Oats	April or May	Late August.
B 1 rood	Giant Rape	August	April	Giant Rape and Italian Rye Grass	May	Rape, Early August; Rye Grass, November.
1 rood	Winter Rye	September	April and May	Giant Rape and Italian Rye Grass	June	Rape, September; Rye Grass, April.
1 rood	Winter Vetches and Rye	September	May	Hardy Green Turnips	June	October, and again in March or early April.
1 rood	Spring Vetches and Oats.	February	June	Giant Rape	July	November.
1 rood	Spring Vetches and Oats.	March	July	Hardy Green Turnips	August	Early March.
6 roods Total 3 acres.	Winter Vetches, Winter Oats and Wheat	October or early in November	Cut in June and made into Hay	3 roods Hardy Green Turnips 3 ,, Giant Rape	July ,,	November to March or April.

* This plan of catch cropping can also be carried out after spring sown oats, but the sowing and cutting of plots A and B will of necessity be a few weeks later.

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SUMMER SCHOOL ITEMS

University of Virginia, Charlottesville, Va., July 15, 1908

ITEMS is published weekly by the Summer School for the purpose of recording events of general interest and to give a wider circulation to important announcements.

TO THE EDITOR:—
Will you kindly publish anything
from which may be of interest to
our readers

Lectures of the Past Week.

On Wednesday night, July 8, Prof. Pearson, Sec. of the National Audobon Soc., delivered a stereopticon lecture in Cabell Hall. The lecture was highly instructive and set forth the great work of the Audobon Society in protecting our feathered songsters. Mr. Pearson called attention to a number of varieties which have almost or entirely disappeared on account of the slaughter of the mother-birds while their young were unable to care for themselves. At such times the plumage of the mother is more beautiful than at other seasons. The young birds are left to starve in the nests while the plumage of the mother-bird adorns fashionable head-gear. The Audobon Society has as yet no organization in Virginia. Some forty names have been handed in for membership in the Society since the lecture. It is hoped that a local chapter may be formed and become a factor in the organization of the State. Any person may become a member of the National Society by leaving their name and twenty-five cents at the office of the Registrar.

On Thursday night, July 9, Prof. J. A. Anderson, Instructor in Physics, Johns Hopkins University, gave one of the most interesting lectures that has been delivered during the Summer School, on Liquid Air. He showed its exceeding low temperature by freezing water in a test tube immersed in the liquid air, a carnation was next frozen and the petals crumbled under touch. A piece of rubber tubing after being frozen was broken like a glass tube by the aid of pincers. Alcohol was frozen in a test tube, and mercury was frozen so hard on a wooden handle that it could be used as a hammer for driving nails. The boiling powder of liquid air was also shown by its contact with articles of normal temperature, thus liquid air itself boils in contact with atmosphere of ordinary temperature. Because of its large amount of oxygen it causes articles to burn freely which ordinarily are not readily inflamable. Prof. Anderson showed himself to be a master of the subject.

In spite of whatever the thermometer may have recorded, elsewhere the activity of the University Summer School continued last week unabated. In addition to the regular class-work, several public lectures were given, an excursion was conducted to the National Capital, and a lively baseball game between faculty and student teams brought the third week to a close.

On Tuesday evening the chief musical of the summer was given in Cabell Hall, and an audience of over a thousand came together from the University and the town. The recital was in charge of Miss Nell Irvine, Pianist; Miss Kate McNeill, Violinist; and Mrs. Mattie Betts Thomas, Soprano; and the program they rendered evoked the heartiest applause and increased with interest to the end.

The National Audobon Society was represented during the week by Miss Mary Taylor, School Secretary of the National Association of Audubon Societies, and by Miss Katherine H. Stuart, Chairman of Audubon Committee for the Virginia Federation of Women's Clubs. They gave a number of addresses before the assembled students of the Summer School and otherwise labored to present the aesthetic and economic value of wild birds and to organize in this behalf an active interest among the teachers of Virginia.

Echoes from Fourth of July Celebration.

The following toast was proposed by Miss Annette L. Beers of Louisiana:

From the land of Iberville and Bienville, the land where the faithful Evangeline sought in vain for Gabriel, where the grand old oaks wave their hoary banners of moss, and the mocking bird delights the ear with his liquid melody, to dear Virginia, mother of our liberty, our independence, our constitution and our presidents do we bring greetings of love.

First in history, first in war, first in peace,—and may she always remain first in the hearts of her sister states.

The Maryland delegation made the following revision of "Maryland My Maryland" in the last stanza:

Dear Mother burst the tyrants chain,
Maryland! my Maryland.
Virginia should not call in vain.
Maryland! my Maryland.
She meets her sisters on the plain
"Sic semper," 'tis the proud refrain
That baffles minions back amain
Maryland! my Maryland-

The following poem was read by Mr. O. I. Woodley, Supt. of School Passaic, N. J.

A Sentiment to Virginia and the Summer School.

Here's to Virginia, with a great reputation
For beauty and culture, throughout this great nation;
Who is famous for great men, for Washington and Lee,
For Jefferson and Marshall, and for Patrick Henry.

We are here to do honor to her worth and her fame,
To sing of her great deeds, her glories proclaim;
To assure her we love her, her sister states, all,
From Georgia to Idaho, to Rhode Island, so small.

And long may her record untarnished remain;
May her star be yet brighter through the efforts of Payne,
And Maphis, and Jenkins, Mrs. Moffett, and Glass,
And you and all others who belong to their class.

May this great Summer School do its work true and well;
On Virginia's sure progress, may its influence tell;
May there be for you all, underneath this fair sky,
The peace, hope and joy of this Fourth of July.

The following poem was recited by Miss Joyce Wofford of Arkansas:

My Happy Little Home in Arkansas.

There's a pretty little cottage where the grass is ever green
And the streamlets from the Bostou Mountains flow,
Where the mocking bird doth sing till the groves with music ring,
At my "Happy Little Home in Arkansas"

Come to see me neighbors, come along,
I'll be there to greet you and all;
'Tis the finest country found,
And I'll show you all around,
At my "Happy Little Home in Arkansas."

We'll go out into the orchards, where the fruit is on the tree,
It's the land where famous premium apples grow,
They are lucious, mellow, sweet, you may have all you can eat,
At my "Happy Little Home in Arkansas."

We'll go out into the mountain, we'll bath in mineral springs,
Go and see the big plantations, dowu below,
Show you cotton, show you cane, show you any kind of grain
At my "Happy Little Home in Arkansas."

Come to see me neighbor, come along,

I'll be there to greet you and all;
'Tis the finest country found,
And I'll show you all around,
At my "Happy Little Home in Arkansas."

Summer School Excursions.

During the past week two excursions, each filling four large carry-alls, went to Monticello. This makes a total of about two hundred and twenty-five students and teachers that have gone to the home of Jefferson in excursion parties, besides many who have gone in smaller parties. It is a delightful trip and should be made by every student.

On Saturday, July 11, F. A. Hodge conducted a party of thirty-two on an excursion to Washington. They left Charlottesville at 5.22 A. M. and left Washington on return trip at 10.45 P. M. They were met in Washington by a large automobile and taken successively through the State, War, and Navy Building, the Treasury, White House, Washington Monument, Printing and Engraving Building and the Capitol. After dinner at the Howard House we again boarded the automobile and were taken through the residential section, passing the various Embassies and residences of the principal congressmen and society leaders of Washington. The Auto. left us at the White House where we listened to a concert by the "Marine Band."

After supper we went to the Capitol, strolled around the grounds and told stories on the Capitol steps. Seven of the party remained over Sunday in Washington. The trip was greatly enjoyed and by the aid of the automobile much was seen in a short time.

The Vesper Service from 7 to 7:35 P. M, Sunday evening is a feature of real worth in the Summer School. The service is only thirty-five minutes long and is very uplifting. The music, the quartette and a short inspiring talk by one of the faculty have been of such high order that the Chapel is crowded to the doors.

The Campus Course.

From midst thy learned ologies
Which mark thy thoughtful brow so wise,
I fancy there peeps out at me
A tiny bit of croquetry,
Sweet normalite.

Say! Would'st thou teach a great big man
Some reading of life's tangled plan,
Some writing of love's mystic signs,
Some reckoning up of sweet joy's lines.
Wise normalite.

'Tis yes? Then I will join thy class
In your oak's shade on close mown grass,
Thy wisdom I'll forgive, you see,
This Campus Course will just suit me,
Dear normalite.

As we go to press the much anticipated Rural Life Week is in full sway. Such speakers as Supt. Kern of Ill., Supt. Bishop of Nebraska, and Mr. Sandy of Virginia are among the forces present. A number of the district superintendents of Va. are also on hand. Supt. Kerns on Tuesday night delivered a splendid address illustrated by 120 stereopticon views. He showed the "before" and "after" in the case of a number of schools in his home state. The beneficial effects of neat school-houses surrounded by flower-gardens and trees on the life of a community was plainly evidenced by some of these views. Virginia could also show some remarkable transformations in school buildings and in rural conditions generally during the past five years. Mr. Kern gave a new educational interpretation to our F. F. V. as meaning Flowers, Fences, and Views.

The excursion to Luray Caverns on July 3 and 4 was so pleasantly reported that another trip to the same place has been applied for.

All who wish to visit this wonderful work of nature should sign up for the trip immediately. Mr. Booten is here with stereoptican slides of the cave and will probably show them some night this week.

Programme.

The following is a program of Rural Life Week at the University of Virginia Summer School:

Monday, July 13th—

4:30 P. M. Rural Teachers' Problems. Round Table, Supt. Bishop and others.

8:00 P. M. Symposium. Domestic Science in Rural Schools, Miss Charlton, Supt. Bishop, Prof. K. C. Davis, Prof. Alwood and others. Illustrated by stereopticon views.

Tuesday, July 14th—

11:45 to 12:15. Assembly Hour. "The Problem," Supt. O. J. Kern of Illinois.

4:30 P. M. "Agricultural Education as Related to School and Community," Supt. E. C. Bishop of Nebraska, Mr. T. O. Sandy, Prof Davis.

8:00 P. M. "Along Country Roads in an Educational Way," Supt. O. J. Kern. Stereopticon Lecture, 120 slides.

Wednesday, July 15th—

Assembly Hour, T. O. Sandy.

4:30 P. M. Domestic Science Miss Charlton. Consolidation of Schools, Supt. Kern, Supt. Bishop, T. O. Sandy and Prof. Stone.

8:00 P. M. "The New Agriculture and the Country School," by Mr. Kern, 100 slides.

Thursday, July 16th—

Assembly Hour, Dr. Seaman A. Knapp.

4:30 P. M. "How Schools May Help Farmers," Dr. Knapp and others.

7:30 P. M. A Play by the Mountain Mission Children. Address on Education in Isolated Mountain Communities, Dr. S. C. Mitchell.

Friday, July 17th—

Assembly Hour. "Boys and Girls Clubs in Agriculture, Domestic Art and Manual Training," Supt. Bishop.

4:30 P. M. School Gardens, Prof. Davis, Supt. Bishop and Miss King. Pure Foods, by E. W. Magruder, State Chemist.

8:00 P. M. "Helping Rural Communities by Fruit Growing," Mr. S. W. Fletcher.

Saturday, July 18th—

9:00 A. M. Betterment of Rural Homes: Sanitation, Water Supply, Farm Shops, Care of Property, Roads, etc., by Prof. Fletcher and Prof. Davis.

8:00 P. M. "The Planting and Care of Home Grounds," Dr. S. W. Fletcher.

Changes in Schedule.

Physics, Prof. J. A. Anderson. Rouse Lab. I.

8.45-9 45, Physics course III.
9.45-10.45, Physics course, IV.
10.45-11.45, Physics course VI.
12:15-1.15, Physics course V.

Training Class Schedule.

Mrs. Moffett.

8.45-9.45, Arithmetic.
9.45-10.25, Geography.
10.25-11.00, History.
11.00-11.45, English.
12.15-12.45, Hygiene.
12.45-1.15, Civil Government.

Music—Mrs. Starte.

8.00-8.45, Primary Music.
8.45-9 45, IV. V. and VI. Grade Music.
9.45-10.45, II. and III. Grade Music.
12.15-1.15, III and IV. Grade Music.
3.00-4.30, High School Music.

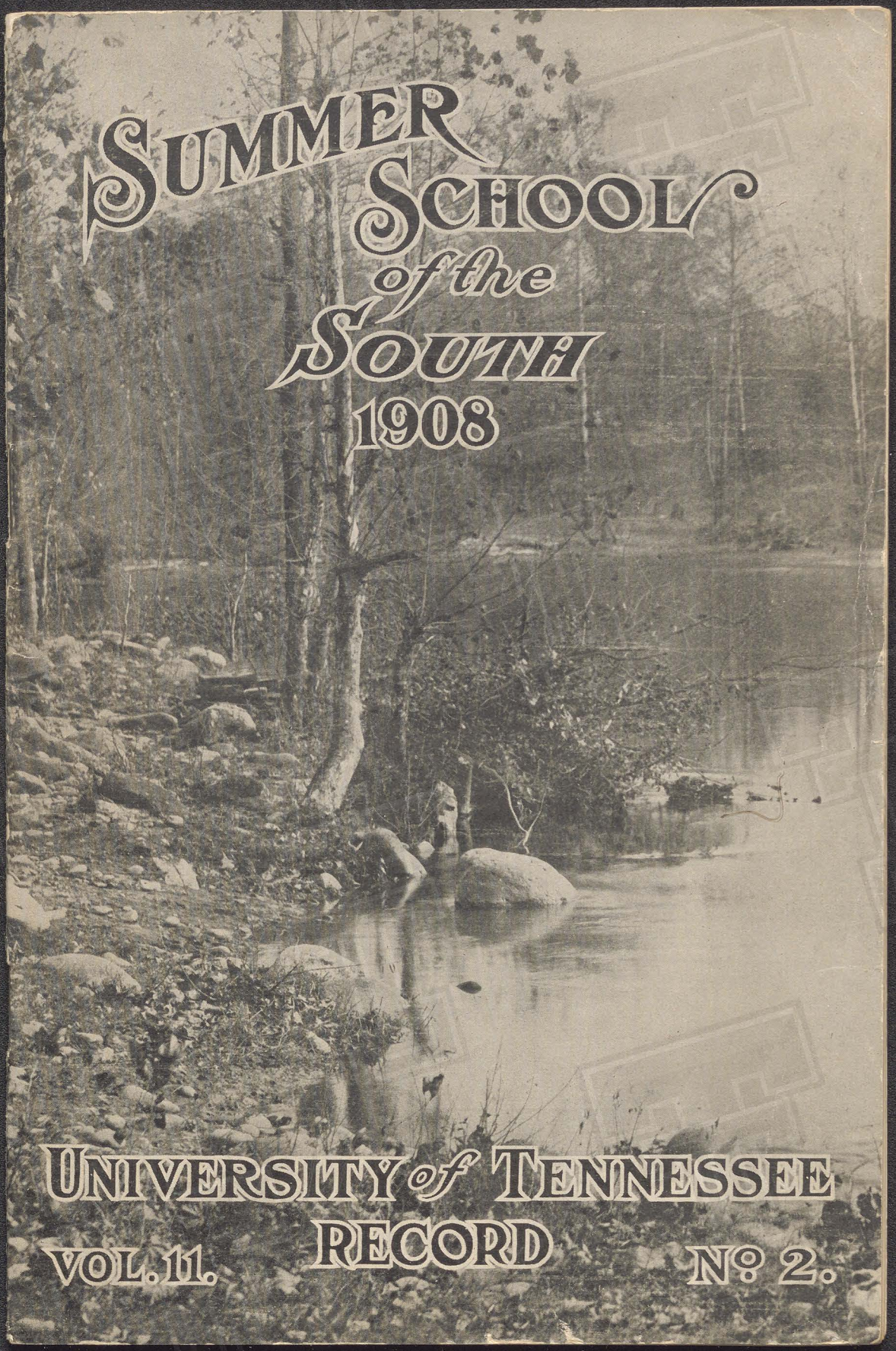
Astronomy, Prof. J. B. Smith.

12.15-1.15, Astronomy, C. H. 6.

Baron Du Launey of Paris, will play the organ at Vesper Service Sunday evening; also each evening next week from 7:30 to 8:30 in Cabell Hall.

The last event of the week attracting public attention was a base ball game played on Lambeth Field between members of the faculty and of the students. Five innings, as agreed on beforehand, ended the contest, and the faculty took their defeat good naturedly.

SUMMER SCHOOL of the SOUTH 1908



UNIVERSITY of TENNESSEE RECORD

VOL. 11. No. 2.

University of Tennessee

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SUMMER SCHOOL OF THE SOUTH

UNIVERSITY OF TENNESSEE, KNOXVILLE.

SEVENTH SESSION—JUNE 23 TO JULY 31, 1908

The seventh session of the Summer School of the South will be held at the University of Tennessee the six weeks beginning June 23 and ending July 31, 1908. This school was established in response to a demand from the progressive teachers of the South for a summer school of high grade at some accessible central point, with a good summer climate and attractive surroundings, and where good board and comfortable lodging for large numbers of people could be had at reasonable prices. The unprecedented success of the sessions already held shows that Knoxville is the right place for the school and that the organization is approximately correct.

The attendance at all these sessions has been very large, the average being nearly two thousand. About forty states have been represented, including all the Southern states. Among the students have been teachers of all grades—kindergartners, teachers of rural public schools, grade teachers, department supervisors in city schools, city and county superintendents, principals and teachers of high schools and academies, college professors—and all have found work adapted to their special wants, and general lectures and entertainments attractive and stimulating to all.

The presence of so large a number of men and women of sound scholarship and fine culture, representing all phases of educational life, associated on terms of familiar equality, in itself gives to this school a superior educational and social value. The facts that all, whatever may be the special interest of individuals, come together to listen to the many excellent lectures on educational principles, practices and policies, and that all alike join freely in the discussions of the educational conferences, make it the most powerful influence in the present educational revival in these states. Nowhere else do so many Southern teachers meet to work together, to learn to know each other, and to inspire each other to greater efforts.

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The University has a complete system of drainage and sanitation. Pure water is supplied from the city reservoir. The buildings and grounds are lighted by electricity.

The location of Knoxville, in the geographical center of the territory south of the Potomac and Ohio, at the junction of railroads from the north, south, east and west, makes it one of the most accessible points in the Southern states. The city contains about sixty thousand inhabitants, and is noted for its elegant homes and the culture of its people.

The extensive plant of the University of Tennessee (including the State Experiment Station and farms of the Agricultural College, the shops of the College of Mechanic Arts, and the laboratories and libraries of the College of Liberal Arts), the climate and scenery of a mountain section, and the presence of a great industrial city make this a most desirable place for a summer school for teachers.

ORGANIZATION

From the beginning, in order to meet the many and varying demands of teachers of all grades and subjects, the school has employed a large number of expert instructors from the best schools and colleges of the country, and has offered each year over one hundred and fifty different courses. They are grouped in such way as to meet the requirements of kindergartners, primary teachers, teachers in high schools and colleges, and those interested in special departments, such as drawing, manual training, economics, pedagogy, etc. The experience of six years has proven that some closer organization is desirable.

Therefore, in accordance with the announcement made last summer, the school is being organized into closely articulated schools, with successive courses of study running through two, three or four years, each supplemented by home reading and study. This will enable teachers to do progressive work in any particular subject and to receive credit for the same. It is expected that these credits will be recognized by many of the best schools and colleges in all parts of the country. In many groups of subjects this organization is practically complete and the courses of study for the next four years have been mapped out. This will be done by all before the close of the approaching session, and immediately thereafter bulletins will be printed, containing outlines, references and directions for home reading and study.

Schools are, or will be, organized as follows:

1. Education, including history of education, philosophy of education, methods and principles of teaching, educational psychology, special methods in kindergarten and primary schools, with model schools for observation.
2. Drawing, manual training, arts and crafts.
3. Physical training.

3a. Games and plays.

4. Expression.
5. Music.

6. Agriculture, horticulture, forestry, and agricultural education.
7. Home economics.
8. Nature study, biology and human physiology.
9. Geography and geology.
10. Physics.
11. Chemistry.
12. Mathematics.
13. History.
14. Economics and sociology.
15. Ancient languages.
16. Modern languages.
17. English grammar, rhetoric, composition and Anglo-Saxon.
18. Literature—English and American literature, literature in translation, the Bible.
19. Philosophy and ethics.

Under these heads two hundred or more courses will be offered—enough to permit teachers who desire to do so to give all their time to the studies of a single school.

In each school there will be employed a more or less permanent group of instructors. Special arrangements will be made so that students may buy, at the least possible cost, through the secretary of the school, the books to be used for home reading and study. The bulletins will give full and helpful outlines and suggestions for this study.

This will enable teachers to give the greater part of the time during the six weeks to lectures and recitations, in direct contact with expert instructors, and to do the parallel and supplementary reading between sessions.

WORK FOR HIGH SCHOOL TEACHERS.

Because of the large and rapidly increasing demand for high school teachers, special attention will be given to the matter and method of high school subjects, particularly to elementary physics, chemistry, biology, agriculture, home economics, and other similar new subjects for which teachers have had less opportunity to prepare themselves.

NATURE STUDY AND AGRICULTURE. TENNESSEE SCHOLARSHIPS.

Special attention is called to the work in nature study, agriculture, horticulture and forestry. With the assistance of the University of Tennessee, this department is very thoroughly and completely organized, and instruction in all departments of nature study and agriculture are given by members of the faculty of the University and experts from other institutions. In this the Department of Agriculture at Washington is co-operating.

Last year the University of Tennessee and the Summer School co-operated in offering to each county in Tennessee two free scholarships

for teachers who would agree to give not less than four hours a day to work in this department and, in return for the registration fee, would agree to teach this subject in their own schools and in the teachers' institutes in their county. The work was very successful and a great impetus has been given to this kind of work in the public schools in Tennessee and many other southern states. This year four free scholarships are offered to teachers in each county on the same conditions. These scholarship students have free admission to all other classes of the Summer School, and to the lectures and entertainments. The agriculture and nature study classes are of course open to all other students of the Summer School for as much time as they wish to give, and there is no special fee for any of this work.

EQUIPMENT

The Summer School has the free use of the entire plant and equipment of the University, including dormitories and dining halls, recitation rooms, laboratories, shops, libraries, museums, farms, gardens, green houses, etc. Several open pavilions and temporary halls large enough for the largest classes and for general lectures have been erected for its use. These are airy and comfortable. Jefferson Hall seats 2,500 people.

Since the last session of the Summer School a large Agricultural Building has been erected on the University grounds, a geological and geographical laboratory has been equipped, and large additions have been made to the equipment of the physics laboratory, agricultural laboratory and the shops. The Summer School will profit by all these improvements.

FINANCIAL SUPPORT.

The principal support of the school is derived from liberal subscriptions from the citizens of Knoxville, appropriations from the county of Knox, the University of Tennessee, and friends of education in all parts of the country. Only a small part of the expenses is paid by fees.

FEES AND EXPENSES

The registration fee of $10.00, which must be paid by all students, at whatever time they may enter or leave, admits to all classes, lectures and entertainments without further charge. Materials used in laboratories and shops are charged at cost. Students should allow a few dollars for textbooks on subjects studied. Books, materials, stationery and all ordinary toilet supplies can be purchased at the cooperative book store on the grounds.

TRAVEL, RAILROAD FARE, SALE OF TICKETS

From Washington, D. C., Cincinnati, O., Evansville, Ind., Cairo, Ill., and from agency stations in the territory south of the Ohio and

Potomac and east of the Mississippi river, all the main lines of railroad will sell round trip tickets to Knoxville at about seventy per cent of the regular first class fare, which on account of recent reduction in rates is little more than the rate of one fare plus twenty-five cents announced for former sessions of the school. Application has been made for reduced rates from the territory north of the Ohio and Potomac and west of the Mississippi river, and it is expected such rates will be made.

Tickets will be on sale on the following dates: June 21, 22, 23, 27, 28; July 4, 5, 11 and 19. The return limit on these tickets will be fifteen days from date of sale, but this limit may be extended to any date not later than midnight of September 30, 1908, by depositing ticket with the special agent at Knoxville and paying a deposit fee of fifty cents. This extension of return limit will permit a stay of several weeks after the close of the school in Knoxville or at some of the numerous summer resorts in the mountains of this section.

The Knoxville Railway and Light Company's system of trolley cars reaches all parts of the city and passes the University grounds. The regular fare is five cents.

BOARD AND LODGING

There are rooms for about three hundred and fifty students in the dormitory buildings on the University grounds. These rooms are furnished plainly, but adequately. Students are required to furnish only towels and personal laundry. Room in Barbara Blount (the University dormitory for women) and table board for the entire six weeks cost $33. Room in other buildings and table board cost $30. These prices are for two persons in a room, and are payable on entrance. Barbara Blount Hall, Reese Hall, Humes Hall, East College and the Y. M. C. A. Building are reserved for women. West College, South College, Kappa Alpha House and the Phi Gamma Delta House are reserved for men.

Private boarding houses offer board and lodging at $5 a week. Lodging can be had in good homes at $1.50 to $2.50 a week. Those preferring it may take lodging in the city and get their meals at the University dining halls. Houses at a distance from the University will offer lodging at such rates as will permit paying street car fare without going beyond the maximum cost of $6 a week for living. For those who lodge in the city and take their meals on the University grounds, comfortable waiting rooms have been prepared, making it possible for them to remain on the grounds until after the exercises of the day are over. For such, a restaurant and lunch room are provided.

Upon application, stating nature of accomodations desired, arrangements will be made for board and lodging in private families and boarding houses, the best available assignments being given. For reserved rooms on the University grounds, and for assignments to board and lodging in the city, write to Thos. D. Morris, Business Manager, Knoxville, Tenn.

CERTIFICATES AND CREDITS.

Certificates are given in each course for regular attendance and satisfactory work. Under necessary restrictions, credit is given for this work in the University of Tennessee and in some other Southern colleges. The state superintendent of public instruction of Tennessee has agreed to extend one year the time of all honor roll certificates whose owners attend this school not less than four weeks, and will advise county superintendents to renew, without examination, the license of all teachers who attend this length of time and do regular and satisfactory work in as many as three subjects, and have complied with all other requirements of their county superintendents.

MUSIC.

Those wishing private instruction in voice culture, piano, harmony and history of music, should address Professor Eugene Parsons, University of Tennessee, Knoxville. Professor Parsons is licentiate instructor in music, University of Tennessee.

LECTURES AND ENTERTAINMENTS

Lectures of general interest will be given daily in Jefferson Hall at ten o'clock in the morning, when there will be no other lecture or class recitations. Every evening at eight o'clock there will be a popular lecture or musical entertainment. These general lectures and entertainments, including the musical recitals mentioned later, will be free to all students of the Summer School, and open to the public upon the payment of a small admission fee. For list of some of the Lectures and Readings, and for musical concerts, see page 39. These are given both for entertainment and for their educational value.

MODEL PRIMARY SCHOOLS AND KINDERGARTEN

Methods in reading, language, elementary arithmetic, manual training, elementary geography, and other primary work will be illustrated in model schools, under the direction of expert teachers. Kindergarten methods will be illustrated in a model kindergarten.

CONVENTIONS AND CONFERENCES

I *Interstate League for the Betterment of Public Schools.* Fourth annual convention. Addresses by prominent workers in school improvement in several Southern states. Round table discussions. July 6, 7.

II *The Southern Kindergarten Association.* Third annual convention. July 9, 10.

III *The National Story Tellers' League.* Fourth annual convention. July 17.

IV *National Guild of Play.* Third annual convention. Play festival. July 18.

RECREATIONS AND OUTINGS. SWIMMING POOL.

The tennis court and ball grounds offer opportunity for pleasant recreations, and many outdoor games will be organized. Students should bring their musical instruments, tennis racquets, and other apparatus for music and sports.

The large swimming pool of the College Y. M. C. A. will be open to students of the Summer School, and in charge of competent attendants. Three afternoons will be reserved for men and three for women. Bring bathing suits.

Knoxville is in the midst of a region of delightful views and popular resorts. Excursions will be arranged to interesting places in and about Knoxville—to manufacturing plants, car works, marble mills, quarries, mines, Island Home farm, etc., and to places of interest in the mountains of East Tennessee and Western North Carolina.

Knoxville's fifty churches and more will welcome members of the Summer School to all their services, and its hospitable homes will be open to them.

Most of the courses are for the entire session of six weeks, and students should, if possible, enter at the opening of the session and remain to the close; but they may enter at any time.

Schedule of recitations and lectures will be sent on application.

On arrival in Knoxville, go directly to the Business Manager's office, Science Hall, University grounds. "Kingston" cars pass the University entrance. Fare from station, five cents. Cab fare 25 cents.

For further information, address:

P. P. CLAXTON, Superintendent,
Knoxville, Tenn.

REMEMBER DATES:

School begins June 23 and ends July 31.

Tickets on sale June 21, 22, 23, 27, 28; July 4, 5, 11, 19

Summer School of the South

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THOS. D. MORRIS, Business Manager.
IDA ANDREW, Secretary to Superintendent.

INSTRUCTORS AND LECTURERS

BROWN AYRES *Lecturer*
President University of Tennessee.
B. Sc. and Ph. D., Stephens Institute of Technology; LL. D., Washington and Lee University; South Carolina College; Tulane University of Louisiana; professor physics and electrical engineering, professor of physics and astronomy, dean of the College of Technology, and vice-chairman of the faculty and dean of the Academic Colleges, Tulane University of Louisiana.

THOMAS M. BALLIET *Education*
Professor of the Science of Education, and Dean of the School of Pedagogy, New York University.
A. B., A. M., Ph. D., Franklin College, Marshall College, Yale University; Leipzig; superintendent schools of Springfield, Mass.; lecturer in summer schools at Harvard University, Clark University (Worcester, Mass.), University of Wisconsin, and University of Virginia.

WILLIAM JEFFERSON BARTON *Plays and Games*
Principal of Hampden-Sidney School, Knoxville, Tenn.
A. B., University of Tennessee

DANIEL BEDDOE *Music Recitals*

Oratorio and concert singer; tenor.

Mr. Beddoe is one of the most noted tenors in America. He has an enviable reputation as an oratorio singer, and has appeared in the great music festivals.

GORDON MANSIR BENTLEY *Agriculture*

Instructor in Zoology, University of Tennessee; Assistant Zoologist and Assistant State Entomologist, Tennessee.

B. S. A. and M. A., Cornell University; professor of zoology and botany, and vice-princpal of Union Academy, Belleville, N. Y.; instructor entomology, North Carolina Agricultural and Mechanical College; assistant state entomologist of North Carolina.

JOHN THOMPSON BROWN *English*

Assistant Professor of English, University of Tennessee.

B. A., M. A., University of Virginia; principal Brown's University School; instructor in English, University of Virginia.

BURTIS BURR BREESE *Psychology*

Professor of psychology, University of Cinncinnati.

B. A. and M. A., Harvard; Ph. D., Columbia; higher diploma of Teachers' College; assistant in psychology, Harvard; fellow in psychology and education, Teachers' College; studied in Europe 1900-2; professor of psychology and ethics, department of education, University of Tennessee.

HELEN BUQUO *Home Economics*

Graduate in Domestic Science, University of Tennessee.

PHILANDER PRIESTLEY CLAXTON *Education*

Professor of education, University of Tennessee.

A. B. and A. M., University of Tennessee; D. Lit., Bates College; Johns Hopkins University; student of systems and methods of education in Europe; superintendent of city schools, Asheville, North Carolina; professor of pedagogy in North Carolina State Normal and Industrial College.

FREDERICK JAMES CORL *Manual Training*

In charge of Drawing Department, Dupont Manual Training High School for Boys, Louisville, Ky.

Toledo University Manual Training School; special student at University of Michigan, Cornell University, Boston School of Technology, A. W. Daw's Summer School of Arts and Designs.

ALICE WOODWARD COOLEY *Literature in the grades*

Educational Lecturer.

Principal of schools in Minneapolis; supervisor of primary schools, Minneapolis; assistant professor in department of education, State University of North Dakota; author of "Language Lessons from Literature."

DICK J. CROSBY *Agriculture*

Agricultural educator; assistant in the office of Experiment Stations, U. S. Department of Agriculture.

M. S., Michigan Agricultural College; vice-president Department of Children's Gardens, American Civic Association.

GEORGE HERBERT CLARKE *English Literature*

Author and Lecturer.

B. A. and M. A., McMaster University, Toronto; managing editor, Baptist Union, Chicago; graduate student, University of Chicago; professor of Englsh, Mercer University; author of Some Early Letters and Reminiscences of Sidney Lanier; editor of Bacon's Essays, Selected Poems of Shelley, etc.

HENRY JOHNSTON DARNALL — *German*

Professor of Modern Languages, University of Tennessee.

University of North Carolina; Washington and Lee University; Leipzig and Paris.

EDITH SMITH DAVIS — *Physiology*

Director of Bureau of Scientific Temperance Investigation and Superintendent of Scientific Instruction, World's and National W. C. T. U.

B. A., M. A., D. Litt., Lawrence University; postgraduate student Wellesley College; author Temperance Stories and Sketches.

ELIZABETH DODGE — *Music Recitals*

Oratorio and concert singer. Soprano.

Called the first concert soprano in America today.

LAWTON B. EVANS — *Education*

Superintenent of public schools of the City of Augusta and of Richmond county, Georgia.

A. B., Emory College; A. M., University of Georgia; president of Georgia Summer Normal College; author of Evans' History of Georgia, and of Lectures on School Supervision.

DORA W. ENSOM — *Kindergarten*

Director of Public School Kindergarten, Rochester, N. Y.

Graduate Sydney Kindergarten College, Australia; instructor in New Zealand, Chicago, and Chautauqua, New York; Chicago Kindergarten Institute.

ROYAL BAILEY FARNUM — *Drawing*

Principal Normal Department of the Cleveland School of Arts, Cleveland, Ohio.

Graduate Massachusetts Normal Art School.

EDWIN WHITFIELD FAY — *Greek*

Professor of Latin in the University of Texas.

A. M., Southwestern Presbyterian University; Ph. D., Johns Hopkins University; instructor in classics, Sanskrit and comparative philology, University of Michigan; student University of Leipzig; professor of latin, Washington and Lee University. Graduate Massachusetts Normal Art School.

MAURICE GARLAND FULTON — *English*

Professor of English, Central University of Kentucky.

Ph. B., A. M., and instructor in English, University of Mississippi; instructor in rhetoric, University of Illinois; instructor in rhetoric, University of Michigan.

W. T. GARRETT — *Mathematics*

Principal high school and instructor in mathematics, Griffin, Ga.

A. B., Yale College; instructor in mathematics, Groton School; Peacock's School for Boys; superintendent of schools, Cedartown, Ga.

ELIZABETH M. GETZ — *Drawing*

Supervisor of drawing in public schools of Atlanta, Ga.

Art student in Cincinnati and Paris; graduate Glenn Home Kindergarten Normal; teacher of drawing in schools of Helena, Minneapolis, Saginaw and Charleston, S. C.

CHARLES HENRY GORDON *Geography and Geology*

Professor of Geology and Mineralogy, University of Tennessee.

B. S., M. S., Albion College; Ph. D., University of Chicago; Fellow in Geology, University of Chicago; superintendent of schools, Beloit, Wis.; student University of Heidelberg; superintendent of city schools, Lincoln, Neb.; lecturer in geology and education, University of Nebraska; acting professor of geology, University of Washington; professor of geology and mineralogy, New Mexico School of Mines; field assistant and assistant geologist, U. S. Geological Survey.

B. C. GREGORY *Froebel's Philosophy of Education*

Superintendent of public schools, Chelsea, Mass.

Graduate of the College of the City of New York; supervisor of public schools, Trenton, N. J.

MAUDE M. GILLETTE *Drawing and Crafts*

Professor of drawing and arts, Georgia Normal and Industrial College.

Graduate of normal art and manual training, Pratt Institute; supervisor of drawing in the public schools of Bradsford, Pa.; instructor in arts and crafts, Chautauqua Summer School, New York.

EDWARD HOWARD GRIGGS *Lectures*

Author and Lecturer.

A. M., Indiana University; Student University of Berlin; Professor of Literature, Indiana University; Professor of Ethics and Head of Departments of Ethics and Education, Leland-Stanford University; Author of The New Humanism; Moral Education, etc. Public lecturer.

WILLIAM NICHOLAS HAILMANN *Education*

Professor of the History of Education, Chicago Normal School.

A. M., University of Louisville; Ph. D., Ohio University; superintendent of public schools, LaPorte, Ind.; national superintendent of Indian schools; superintendent of public schools, Dayton, Ohio. Author: Outlines of a System of Object Teaching; History of Pedagogy; Kindergarten Culture; Letters to a Mother; Early Education; Primary Helps; Primary Methods; Application of Phychology to Teaching; Froebel's Education of man; Constructive Form Work, etc. Editor Erzielungsblaetter; New Education.

MARIAN STUART HANCKEL *Kindergarten*

Principal South Carolina Kindergarten Association Training School, Charleston, S. C.

Graduate South Carolina Kindergarten Association Training School; post graduate course, Chicago Kindergarten Institute; kindergarten Chautauqua (N. Y.) Summer School; supervisor of kindergartens, Charleston, S. C.; president Southern Kindergarten Association.

LEE F. HANMER *Lectures*

Field Secretary Play Ground Association of America.

MAY LOUISE HARVEY *Primary*

Expert teacher and primary supervisor, instructor in methods, American Institute of Normal Methods, Boston.

Vermont Normal School; Boston School of Languages; Boston School of Expression; pupil of Zuchtman and George L. Osgood.

ELIZA JOSEPHINE HARWOOD *Physical Training*

Instructor in organic training, School of Expression, Boston.

Diploma and post-graduate course, Posse Gymnasium; special third year student of Baron Nils Posse; teacher's diploma Boston School of Expression; diploma Gilbert Normal School of Dancing nad Aeshtetic Physical Training; instructor in physical training, Wesleyan Seminary, Kent's Hill, Maine; Mount St. Joseph's Academy, Brighton, Mass.; director Hardy Hall Gymnasium, Salem, Mass.

ARCHIBALD HENDERSON *Literature*

Associate professor of mathematics, University of North Carolina; author and dramatic critic.

A. B., A. M., and Ph. D., University of North Carolina; graduate student and instructor in mathematics,, University of Chicago; contributor to numerous journals and periodicals, foreign and American—La Societe Nouvelle (France); Deutsch Revue (Germany); North American Review, Arena, Overland Monthly, Sewanee Review, etc.

CHARLES OTIS HILL *Chemisty*

Assistant professor of chemistry and instructor in pharmacy, University of Tennessee.

A. B., University of Tennessee; Ph. C., University of Michigan; assistant in chemistry, University of Tennessee.

AMALIE HOFER *Kindergarten*

Principal Pestalozzi Froebel Kindergarten Training School, Chicago Commons.

Graduate Elizabeth Harrison Training School; member of faculty of Buffalo Free Kindergarten Training School and of Chicago Free Kindergarten Association; editor Kindergarten Magazine; United States delegate to Educational Congress, Paris, 1900; kindergarten director to Chautauqua and faculty Chautauqua School of Pedagogy; director Chicago Kindergarten Institute.

MARI RUEF HOFER *Music and Games*

Instructor in School Music and Games at Teachers' College, Columbia University; Extension Lecturer.

Mount Carroll Seminary; University of Chicago; special instructor of music in Chicago High Schools; supervisor of music in Rochester (N. Y.) public schools; course instructor to leading Kindergarten Training Schools; Chautauqua Department of Music; compiler of Children's Singing Games, Instrumental; Primary and Junior Songs for the Sunday School Music for the Child's World; Characteristic Scenes and Sketches; Rhythms, Marches, Games, Popular Folk Games.

JAMES DICKASON HOSKINS *European History*

Professor of History and Economics, University of Tennessee..

B. S., M. A., and B. L., University of Tenessee; University of Chicago.

CLIFTON FREMONT HODGE *Nature Study*

Professor of Biology, Clark University, Worcester, Mass.

Ph. D., Johns Hopkins University; instructor in biology, University of Wisconsin; member American Physiological Society, Society of American Naturalists, American Forestry Association, American Ornithologist's Union; author: Biology of the Common Toad, Our Common Birds, Nature Study and Life, etc.

LINCOLN HULLEY *Lectures, Literature of the Bible*

President John B. Stetson University.

A. B., Harvard; A. M., Bucknell; Ph. D. and fellow in Semitics, University of Chicago; traveled and studied in Europe; faculty of Chautauqua; lecturer and member of the Council of Seventy; professor of Hebrew and history, Bucknell University.

MARGARET KEYES *Music Recitals*

Oratorio and concert singer. Contralto.

Concert singer with a great voice.

CHARLES A. KEFFER *Forestry, Agriculture*

Profesor of Horticulture and forestry, University of Tennessee.

Iowa Agricultural College; professor of botany, horticulture and forestry, South Dakota Agricultural College, University of Missouri, and New Mexico Agricultural College; assistant chief of the Division of Forestry, United States Department of Agriculture.

SEAMAN ASAHEL KNAPP *Lecturer on Agriculture*

President Rice-Growers' Association of America, director of Co-operative Agricultural Experiments, United States Department of Agriculture.

LL. D., Upper Iowa University; president Iowa State College for the Blind; president Iowa Stock Breeders 'Association; professor of Agriculture and president of State Agricultural College of Iowa; visited Japan, China, Philippines and Porto Rico for the United States Department of Agriculture.

JOSIAH MAIN *Agriculture*

Assistant Professor of Agricultural Education, University of Tennessee.

B. S. A., University of Illinois; Licensed Institute Instructor in Science (Illinois); instructor Cape May School of Agriculture.

MARY J. MCAFEE *Basketry*

Originator of pine needle basketry; chairman of Basketry Section of West Point, Ga., Woman's Club; contributor to George Wharton James Practical Basket Making; instructor in pine needle, reed and rafia and grass basketry in public schools and kindergarten.

EMILE W. MCVEA *English and American Literature*

Assistant professor of English in College for Teachers, University of Cinncinnati.

St. Mary's School, Raleigh; Harvard University; University of North Carolina; A. B. and A. M., Columbian University; principal of St. Mary's School, North Carolina; instructor in English and literature, University of Tennessee.

W. MABEL MILLER *Writing*

Teacher in public schools.

Valley Female College; Powhatan College.

WALTER MILLER *Latin and Roman History*

Professor of Greek, Tulane University.

A. M., University of Michigan; University of Leipzig; American School of Classical studies, Athens; instructor in Greek, Latin and Sanskrit and assistant professor, University of Michigan; Royal Archaeological Seminary, University of Leipzig; associate professor of Greek, University of Missouri; professor of Classical Philology, Stanford University; author Latin prose composition for college use, etc.

FRANK MORRELL *Chemistry*

Teaching Fellow in Chemistry, University of Tennessee:

B. S., University of Tennessee.

JOHN HARCOURT ALEXANDER MORGAN *Agriculture*

Professor of zoology and entomology and director of the Tennessee Agricultural Experiment Station.

A. O. A. C., Ontario Agricultural College; B.. S. A., University of Toronto; graduate student Cornell University; Marine Biologic Laboratory; professor of Entomology and Horticulture, Louisiana State University, and entomologist, Louisiana Experiment Station; entomologist and secretary, Louisiana Crop Pest Commission; director of Gulf Biologic Station.

CHARLES ANSEL MOOERS *Agriculture*

Chemist of the Agricultural Experiment Station and instructor in agricultural chemistry, University of Tennessee.

B. S., University of Tennessee; assistant chemist of the Agricultural Experiment Station; chemist of the North Louisiana Experiment Station; chemist with the Union Oil Company and the New Orleans Acid and Feltilizer Company.

FREDERICK WIGHTMAN MOORE *History*

Professor of history and economics, and dean Academic Department, Vanderbilt University.

Ph. D., Yale University; two years travel and study in Europe; student University of Berlin; lecturer on sociology in School of Finance, University of Pennsylvania; member American Historical Association, American Economic Association; Author: Representation in the National Congress for the Seceding States, 1861-5; Course of Louisiana Politics, 1862-6.

BESSIE B. MULFORD *Primary Methods*

Practice Teacher, Normal School, Washington, D. C.

Graduate Froebel Normal Institute; teacher of Model School; assistant to Supervisor of Primary Schools, Washington, D. C.

MAURICE MULVANIA *Physiology and Hygiene*

Assistant in Bacteriology, University of Tennessee.

B. S. and M. S., Western Normal College; University of Nebraska; graduate student University of Tennessee; University of Chicago; assistant in zoology and bacteriology Oklahoma Agricultural and Mechanical College; professor biology Western Normal College.

SEYMOUR A. MYNDERS *History and Education*

Superintendent of Schools of Knoxville, Tennessee.

A. B., University of Tennessee; superintendent schools, Jackson, Tenn.; state superintendent of public instruction of Tennessee; president Association of Southern State Superintendents of Public Instruction.

ETHEL NORTHERN *Primary Methods*

Supervisor primary work, Public Schools of Nashville.

University of Chicago; University of Nashville.

ROBERT MORRIS OGDEN *Psychology*

Professor of Philosophy and Psychology, University of Tennessee.

B. S., Cornell University; Ph. D., University of Wurzburg; Assistant in Psychology, University of Missouri; auhtor of articles on psychology in German and American Reviews.

EUGENE PARSONS *Music*

Choirmaster, licentiate instructor in voice culture, piano, organ and harmony, University of Tennessee.

Boston Conservatory; New York Conservatory.

ANDREW HENRY PATTERSON *Physics and Astronomy*

Professor of Physics and Astronomy, University of Georgia.

A. B., University of North Carolina; A. B. and M. A., Harvard University; student Westinghouse Electric Works; electrician Consolidated Traction Company, Jersey City; student Cambridge University and University of Berlin; fellow American Association for the Advancement of Science; member American Physical Society.

T. GILBERT PEARSON *Nature and Bird Study*

Secretary National Audubon Society.

B. S., Guilford College and University of North Carolina; Harvard University; field naturalist; professor of biology and geology, North Carolina State Normal and Industrial College; author: Stories of Bird Life.

MINNIE HOLMAN (MRS. J. H.) PHILLIPS *Primary Methods*

Teacher in public schools of Birmingham, Ala.; principal Training School connected with public schools of Nashville, Tenn.; instructor in primary methods in Peabody Normal College, Nashville; teacher and supervisor of primary work in Summer Schools at Oxford, Port Gibson, Aberdeen, Clinton, and Columbus, Miss., Charlottesville, Va., Chattanooga and Nashville, Tenn.

MAUD POWELL *Music Recital*

Miss Powell has the reputation of being the greatest woman violinist in the world. Studied in Leipzig, Paris, Berlin; violin soloist with Thomas, Seidl, Gericke, Nekisch, Damrosch and others; recently soloist New York Philharmonic, Hartford Philharmonic, New Haven Symphony, Theodore Thomas, Boston Symphony, New York Symphony.

JAMES NEWTON PRICE *Agriculture*

Instructor in Dairy Husbandry and Dairyman of Agricultural Experiment Station, University of Tennessee.

B. S. A., University of Missouri; Assistant in Dairying, University of Missouri.

OVERTON W. PRICE *Forestry*

Associate Forester, Forest Service, U. S. Department of Agriculture.

FRIEND CURTIS QUEREAU *Agriculture*

Instructor in Animal Husbandry, University of Tennessee.

B. S., Louisiana State University; M. S. A., University of Illinois.

A. B. RECKNAGLE *Forestry*

Forest Service, U. S. Department of Agriculture.

LILLIAN RULE *Primary*

Director of Primary Work, Georgia State Normal and Industrial College.

Teacher in Knoxville city schools; student in Teachers' College, Columbia University; teacher in the Speyer School, New York; director of primary work in Newman Manual Training School, New Orleans.

A. L. RHOTON *Mathematics*

Professor of Mathematics, Georgetown College.

B. A., Georgetown College; M. A., Columbian University; graduate student University of Chicago; professor of mathematics Southwestern Baptist University.

FRANKLIN L. RILEY *History*

Professor of History, University of Mississippi.

A. B., A. M., Mississippi College; Fellow in History and Ph. D., Johns Hopkins University; President Hillman College; Secretary Mississippi Historical Society and editor of its publications; author School History of Mississippi and numerous monographs on historical subjects.

COOPER D. SCHMITT *Mathematics*

Dean of the College and Professor of Mathematics, University of Tennessee.

B. S., Mercersburg College; M. A., University of Virginia; mathematical master, Pantops' Academy.

W. M. SHERFESEE *Forestry*

Associate Chief of the Office of Wood Preservation, Forest Service, U. S. Department of Agriculture.

MARGARET SOMERVILLE *Kindergarten*

Director Free Kindergarten, Jacksonville, Fla.

Graduate Kate Baldwin Free Kindergarten Normal.

HENRY LAWRENCE SOUTHWICK *Expression*

Dean of Emerson College of Oratory and professor of oratoric and dramatic delivery; public reader; lecturer.

Head Master in English, William Penn Dramatic School; instructor in Glens Falls Summer School, Martha's Vineyard Summer School, Virginia Summer School of Methods.

JESSIE ELDRIDGE SOUTHWICK *Expression*

Instructor in voice culture, epic and lyric poetry and Shakespeare, Emerson College of Oratory; public reader.

CHARLES SPRAGUE SMITH *Lecturer*

Student Amherst College, Berlin, Paris, Rome, Madrid, Oxford, and in Scandinavia; professor of modern languages and foreign literature, Columbia University; organizer and president of Comparative Literary Society; author of Barbizon Days, etc. Graduate Kate Baldwin Free Kindergarten Normal.

C. ALPHONSO SMITH *English Literature*

Professor of the English language and Dean of Graduate School, University of North Carolina.

B. A., and M. A., Davidson College; Ph. D. and instructor of English, Johns Hopkins University; London, Paris, Berlin; LL. D., University of Mississippi; professor of English in Louisiana State University; member of Modern Language Association, American Dialect Association, German Shakespeare Society, Shakespeare Society of New York; author of Repetition and Parallelism in English Verse, Old English Grammar and Exercise Book; associate editor of The World's Orators; editor of Macaulay's Essays on Milton and Addison; author of English Grammar for Common Schools, etc., etc.

HERBERT A. SMITH *Forestry*

Editor of Forest Service, U. S. Department of Agriculture.

SARAH E. SPRAGUE *Primary*

B. S., M. S., Ph. D., Lawrence University; graduate State Normal School, Oswego, N. Y.; post-graduate work University of Minnesota in pedagogy, literature and philosophy; state inspector of graded schools and state conductor of institutes in Minnesota; author of Merrill Advanced Readers, the Sprague Classic Readers, Primary Methods, the Sprague Primer, and many poems and stories for children.

AMANDA STOLTZFUS *Primary and Manual Training*

Principal Farragut School

University of Nashville and Peabody Normal College; University of Tennessee; Teachers' College, Columbia University; Principal Highland Avenue School, Knoxville; instructor in manual training, University of Tennessee.

W. K. Tate — *Geometry*

Principal of the Meminger Normal School, Charleston, S. C.

A. B. and A. M., University of Nashville; graduate student, University of Chicago.

Mary Louise Tuttle — *Home Economics*

Dean of Women and Assistant Professor of Home Economics, University of Tennessee.

Graduate Teachers' College, Columbia University; instructor in domestic science, Teachers' College; student Connecticut Agricultural College; director of Domestic Science Department, College of Industrial Arts, Denton, Tex.

Charles Willard Turner — *U. S. History and International Law*

Professor of law and of constitutional history, University of Tennessee.

A. B. and A. M., Amherst College.

James Tyler — *Poultry*

Instructor in poultry raising, University of Tennessee.

Graduate Cornell University.

John Francis Voorhees — *Meteorology and Climatology*

Observer U. S. A. Weather Bureau, Knoxville, Tenn.

Graduate Young Men's Christian Association Training School, Chicago; director of physical culture in Young Men's Christian Associations; instructor in physical culture, University of Tennessee.

Joseph Elwyn Wing — *Agriculture*

Farmer, Associate Editor Breeder's Gazette, Lecturer and Traveler.

Sara Withers — *Model School*

Principal of the model school, Winthrop Normal College, Rock Hill, S. C.

Graduate of Winthrop Normal College; teacher in graded schools, Darlington, S. C.; student at Teachers' College, New York; supervisor of primary work in graded schools, Chester, S. C.

Herbert Witherspoon — *Music Recitals*

Oratorio and concert singer. Basso.

One of the most noted and popular bassos in America.

Richard T. Wyche — *Story Telling*

Story specialist and lecturer on art of story telling.

University of North Carolina; University of Chicago.

Glenn Alvin Worthington — *Physics*

Instructor in Physics, University of Tennessee.

B. S., University of Tennessee.

Bert Edward Young — *Romance Languages*

Associate Professor of Romance Languages, Vanderbilt University.

M. A., Vanderbilt University; Chicago University; Sorbonne; Dr.-es-lettres, University of Grenoble; professor modern languages, Millsaps College; author; Michel Baron, acteur et auteur dramatique du XVII siecle, etc.

Raphaël Zon — *Forestry*

Chief of the Office of Sylvics, Forest Service, U. S. Department of Agriculture.

To be added: Names of instructors in music and geography, and several lecturers.

Courses of Study

KINDERGARTEN

MISS AMALIE HOFER, MISS MARI HOFER, MISS HANCKEL, MISS SOMERVILLE, MISS ENSOM

I Senior course. (a) The kindergarten program: its psychology and subject matter; study of subjects suitable to Southern interests and environment. Three weeks. (b) Educational documents, including Froebel's texts: "The Education of Man" and "Mother Play Book." Three weeks. (c) Observation in the Summer School kindergarten. (d) Psychology, games and music, history of education—one of these to be selected. Five hours. Six weeks. Miss Amalie Hofer, Miss Hanckel.

II Junior course. (a) Activities and interests of children; (b) Art and hand work; (c) Gift plays and method; (d) Games and music. Five hours. Six weeks. Miss Amalie Hofer, Miss Ensom.

III Kindergarten music and games. Study of songs, rhythms and games suitable for kindergarten age; mother-play games; primitive aspects of rhythm and pitch; early vocal training; genetic development of rhythm; rhythmic movements; skips, marches, kindergarten games; adaptation of folk games and dances; classification of songs, including new material suitable to Southern children; games and piano music; class demonstration. Five hours. Four weeks—July 6-31. Miss Mari Hofer.

IV Summer School kindergarten. Daily 8-10 a. m. Open to members of kindergarten classes and visitors. Weekly conference for mothers and kindergartners. Miss Hanckel, Miss Somerville, Miss Ensom.

All students are requested, before entering, to read "The Kindergarten in American Education," by Nina C. Vandewalker (Macmillans).

V See Dr. Hailmann's courses under Education and courses in Psychology.

Annual convention Southern Kindergarten Association.

METHODS IN PRIMARY WORK

MISS NORTHERN, MRS. PHILLIPS, MISS HARVEY, MRS. MULFORD, DR. SPRAGUE, MISS WITHERS, MISS RULE, MISS STOLTZFUS

I Reading of second, third and fourth grades. A simple, natural foundation, showing power to concentrate, to become independent, and to get thought from the printed page. Type lessons illustrating methods of recitation; the logical and definite assignment of lessons and how to prepare the pupil for study. The value of the sound-unit, showing its relation to spelling, reading and language. Comparative value of intensive and extensive reading. A teacher's plan-book. The New Education

Readers (American Book Company) form the basis of the reading course. Five hours. Six weeks. Miss Northern.

II Arithmetic, language and writing for primary grades. The work of the first four years in arithmetic, given in four unified cycles. Beginnings of language; oral and written exercises; type lessons; the art of story telling; classification of stories; illustrations; making story booklets; lists of stories; pictures guides to literature; charts to illustrate correlated occcupations. Writing: exercises in movement, form and space; attention, speed and accuracy. Five hours. Six weeks. Miss Northern.

III The use of phonics in reading; methods of conducting primary reading lessons; oral and written spelling; penmanship. Lectures and class work with teachers. Illustrated in class of children. The work in reading will be based on the Ward Rational Method. Two sections. Five hours. Six weeks. Miss Harvey.

IV (a) *Reading.* Development of method; objective, representative, symbolic, oral. Specific method: sentence, word, phonic. Results. (b) *Language.* Relation to other subjects. General development of method: objective, representative, symbolic, oral. Subject matter: sense training, nature study, elementary science, stories, games, rhymes. (c) *Number.* Recognizing and naming. Development: objective, representative, oral, symbolic. Aids; tests; weights and measures. (d) *Writing.* Incidental to reading. Special aids: preparatory finger work; use of blackboard; pencil tablet and copybooks. (e) *Drawing.* Simple objects from nature. Treatment of subjects based on geometrical forms. (f) *Physical culture.* Special advantages. Specific methods. (g) *General Lessons.* Seat work. Two sections. Five hours each. Six weeks. Mrs. Phillips. .

V Subject matter and method for the first four school years. Emphasis of the connection of the home and school interests; practical plans for school work. Five hours. Six weeks. Miss Rule.

VI Hand work in the first four years. Theory of its relation to subject matter, and value of activity it provides, class work construction. Five hours. Six weeks. Miss Rule.

VII First and second grades: Reading and language arts; oral English, stories, dramatization, phonics and pronunciation, simple writing in English. Number: counting, ratio, sense training, games. Nature study: Field and class room work in mammals, birds, insects and plants. Manual training: Paper cutting, clay modeling, cardboard construction. Five hours. Six weeks. Mrs. Mulford.

VIII Third and fourth grades. Reading and language: Oral and written English based on literature, nature study, history and geography; simple treatment of the sentence and grammatical forms. Arithmetic: Fundamental processes, multiplication table, simple fractions, problems in constructive work. History: Hero tales of all nations. America's story for America's children. Geography and nature study. Five hours. Six weeks. Mrs. Mulford.

IX-X First, second and third grades. (a) Reading. Gain in culture,

thought power, and in interpreting and expressing thought; standards of good reading; taste for good literature; character development; methods explained, compared, combined; choice of methods; causes of poor reading and how to overcome them; physiological laws; mechanics of reading; silent and sight reading; supplementary reading; nature, value, and place of each; drills; reviews; original blackboard lessons; poetry in the primary grades. (Particular attention given to lessons from the blackboard and from books illustrating the various phases of primary reading. The Sprague Classic Readers used as basis of work.) (b) Spelling: Correlation with other subjects; how to make good spellers. (c) Language: Correlation; oral and written work; original work. (d) Nature study: What it is; what, when, and how much to attempt; correlation with reading, spelling, language and number. (e) Writing. (f) Number: Development of number ideas; correlation; tables; problems, apparatus; drills. (g) Memory exercises. (h) Recreation; games; songs. (i) Health of children. (j) Discipline; ideals. (k) Making programs. Two sections. Each five hours. Six weeks. Dr. Sprague.

XI Methods in teaching reading, phonics, language, literature, nature study and arithmetic in the first and second grades; correlation of drawing and manual training with all subjects. This course will be based on the work done with children of first and second grade in the model school, and will be explanatory of it. It will be open only to those who observe in the school. Five hours. Six weeks. Miss Withers.

XII Observation Schools:

(a) Class room work with children of first and second grades. In addition to work in regular subjects, lessons in drawing, clay modeling and paper cutting will be given. Two hours daily. Six weeks. Miss Withers.

(b) Several groups of children will be used to illustrate work in courses in this department.

See also courses in music, literature in the grades, manual training, story-telling, geography, etc.

LITERATURE IN THE GRADES

Mrs. Cooley

I For primary and lower intermediate grades. Stories and poems. Suggestions as to what literature to use, why, and how to use it. Illustrative lessons.

To be used in class: Collection of fables, myths, folk stories, fairy stories and true stories of past and present. (Teachers will bring whatever good collections they have. Several collections will be for sale at the book-store). Poems by Stevenson, Eugene Field, Frank Dempster Sherman, the Cary sisters, Celia Thaxter, Longfellow, and others. Books used: Hazard's *Three Years With the Poets;* Clarke's *The Story of Ulysses;* Ruskin's *King of the Golden River;* Kingsley's *Water Babies.* Five hours. Three weeks—July 13-31.

II For upper intermediate and grammar grades. Basis of selection;

values; varying treatment according to character and purpose of the selection used. Illustrative lessons.

To be discussed in class: Tales of heroes, mythical and legendary; historical tales; lyric poems; *Vision of Sir Launfal; The Great Stone Face; Rip Van Winkle; Snowbound; Ivanhoe;* selections from John Burroughs, Charles Dudley Warner, and Henry Van Dyke; speeches by Webster and Patrick Henry. Book used: *Literary Masterpieces.* Five hours. Three weeks—July 13- 31.

III For high school. Discussions in class with suggestions for teaching. *Idylls of the King; Sohrab and Rustum; The Ancient Mariner; Evangeline; Silas Marner; The Vicar of Wakefield; Sir Roger de Coverly*

STORY-TELLING GROUP ON CAMPUS IN REAR OF SCIENCE HALL.

Papers; selected lyric poems and ballads; selected essays from Irving, Lamb, Stevenson, Emerson, Ruskin and Carlyle; selected famous speeches; *The Merchant of Venice.* Five hours. Three weeks—July 13-31.

GAMES FOR SCHOOL ROOM AND PLAY GROUND, FOLK GAMES AND DANCES

MISS MARI HOFER, MR. BARTON

I Kindergarten songs and games. See Kindergarten III.

II Organized play. School room games and exercises, drawn from subject matter; action stories, illustrating literature, nature study, industry, civic life and history; physical and aesthetic value of these games; adapta-

tion to school room conditions; marches and games. Five hours. Six weeks. Miss Hofer and Mr. Barton.

III Folk games and dances. Racial and national significance; recreative and social uses; value in physical training and as program material in connection with literature and history. Illustrated by English, American, German, Swedish, French, and Dutch singing games and dances. Festivals, holidays, processionals. Play festivals and programs. Five hours. Six weeks. Miss Hofer and Mr. Barton.

STORY TELLING

MR. WYCHE

I Origin of story telling and literature—Saga-man, Scald and Minstrel; the great classic stories—Siegfried, Beowulf, Ulysses, King Arthur, Hiawatha, Bible stories, fairy and folk tales; use of stories in school, church and home; retelling stories; language and composition; dramatization; moral and spiritual significance.

II Twilight meetings for story telling on Thursday and Sunday evenings. All are invited to attend and take part.

Annual convention of The National Story Tellers' League.

PENMANSHIP

MISS MILLER

I Vertical system of writing for teachers of all grades. Special attention to points to be emphasized in primary work, given in connection with language lessons, and Brownlee's system. Five hours. Six weeks.

II For teachers of higher grades. Movements, legibility, speed: content and individuality of the system. Individual instruction. Five hours. Six weeks.

III Haaren's system. Special attention to movement drills and simple letter forms. Suitable for school room and clerical work. Five hours. Six weeks.

SCHOOL MUSIC.

Full courses for teachers and supervisors of music in schools, with separate classes for teachers of primary, intermediate and high schools. Will be conducted through the six weeks. Courses and instructors announced later.

DRAWING AND ART.

PROF. FARNUM, MISS GETZ, MISS GILLETTE, DR. OGDEN

I For primary teachers. Illustrative, nature and object drawing and applied design; hand work; paper cutting, weaving, clay modeling, paper and cardboard construction. Five periods. Six weeks. Miss Getz.

II For teachers of grammar grades. A systematic, progressive series of lessons on theory of color, with applications in nature, landscape and object drawing, also in design and constructive work. Five periods. Six weeks. Miss Getz.

III Nature drawing in color, ink and pencil; its place in public schools, and adaptation to various grades. Object drawing; principles of proportion and perspective involved in the representation of common objects. Blackboard drawing; its effective use in connection with general school work. Light and shade; drawing from plants. objects, etc. Five hours. Six weeks. Prof. Farnum.

IV Arts and crafts work: design and color—the principles of good design and harmonious color; theory and practice of Munsell color; the designing and making of booklets, envelopes, book-covers, boxes, blotter pads, candle shades, mats, cushions, etc.; mechanical and perspective sketching. Five hours. Six weeks. Prof. Farnum.

V See Course I, Arts and Crafts.

VI See Course II, Arts and Crafts.

VII Psychology of Art. See Psychology IV. Five hours. Six weeks. Dr. Ogden.

ARTS AND CRAFTS AND MANUAL TRAINING

Prof. Corl, Miss Gillette, Miss Stoltzfus, Mrs. McAfee

I (a) Sketching from flower and plant forms, using the brush and ink, water color, and crayola. Five hours. Two weeks. Miss Gillette.

(b) Design, using as motifs those plant and flower forms previously studied. Five hours. Two weeks. Miss Gillette.

(c) Application of design to articles made in leather, such as purses, bags, card-cases, pen-wipers, belts, etc. Five hours. Two weeks. Miss Gillette.

These three courses, given in the order named, make up a full six weeks course.

II For intermediate grades.

(a) A series of lessons in design. Five hours. Three weeks. Miss Gillette.

(b) Application of designs made by means of blue printing and stenciling or leather tooling. Five hours. Three weeks. Miss Gillette.

These two courses will be given in the order named, making a full six weeks course.

III Paper folding, card board, etc. Five hours. Six weeks. Miss Stoltzfus.

IV Basketry. The use of pine needles, raffia and other native material. Five hours. Six weeks. Mrs. McAfee.

V Whittling. For intermediate grades. Elementary working, drawings, and whittling in thin wood with sloyd knife. Five hours. Six weeks. Miss Stoltzfus.

VI Mechanical drawing. Practical course in the use of drawing instruments, geometrical construction, orthographic projection, detail and conventional drawing of machine parts, tracing and blue prints. Five hours or ten hours. Six weeks. Prof. Corl.

VII Furniture design. Design of Mission furniture. Kinds, properties and finish of woods used. Five hours. Six weeks. Prof. Corl.

VIII Wood work. A course for grammar grades involving the

following fundamental and related principles: tool practice in making a series of models, forming the basis for individual development; elementary mechanical drawing; structural and decorative design in its application to woodwork; materials and methods used in finishing; equipment and maintenance. Five hours. Six weeks. Prof. Corl.

IX An opportunity will be given for advanced work for teachers of manual training and advanced students. Elementary or advanced work in the construction of Mission furniture may be taken in this class. Ten hours. Six weeks. Prof. Corl.

X The wood and iron shops of the University of Tennessee are open during the summer for the regular courses given to students of the University. Arrangements have been made by which Summer School students may also take the courses by paying an extra fee of five dollars for each full course of ten hours a week through the six weeks. The work includes pattern making and machine making.

EXPRESSION

DEAN SOUTHWICK, MRS. SOUTHWICK

I Reading in grammar schools. A practical course for teachers. Lectures, discussions, practical illustrative exercises. The relation of the reading lesson to other studies; method of getting good reading; articulation; enunciation, pronunciation; pitch, inflection, modulation, tone color; volume, force, time; training the imagination; conduct of the lesson. Five hours. Six weeks.

II Oral reading in the high school. A course for high school teachers, emphasizing the importance of good oral expression on the part of teachers of literature in high schools. Illlustrated by copious readings from college requirements in English. Five hours. Six weeks.

III Practical and theoretic work in oratory, reading, physical and vocal culture. Adapted to teachers of literature, oratory, physical and vocal culture, public school teachers, kindergartners, lecturers, clergymen, and other public speakers. Practical illustrations. Five hours. Six weeks.

IV Shakespeare. Literary study of King Lear, Macbeth and Merchant of Venice. Five hours. Six weeks.

V Individual instruction; advanced work. To be arranged.

Professor Southwick and Mrs. Southwick will give several readings during the session of the school.

PHYSICAL TRAINING

MRS. HARWOOD, MISS SWINDLER.

I Theoretical. Lectures on general and special kinesiology; applied anatomy, physiology and hygiene; methods of teaching; elements of corrective exercises; anthropometry, etc. Five hours. Six weeks.

II Practical. Free standing exercises, calisthenics, apparatus work; normal drill; application of corrective exercises; physical measurements; basket ball; games, etc. Five hours. Six weeks.

III Fencing. Five hours. Six weeks.

IV Aesthetic physical training. Gilbert system. This will include Mr. Gilbert's new series of rhythmic steps and movements, which are known as American school dances. Five hours. Six weeks.

Those intending to take the Teachers' Course are advised to give special attention to the following subjects, unless they are already familiar with them: physics, chemistry, physiology, psychology, and voice training.

Students will supply themselves with a regulation gymnasium outfit before entering the classes, as this will save much time and trouble.

A fee of five dollars will be charged for Course IV.

AGRICULTURE

PROF. MORGAN, PROF. KEFFER, PROF. MOOERS, PROF. MAIN, MR. BENTLEY, MR. PRICE, MR. TYLER, MR. QUEREAU, DR. KNAPP, MR. WING, DR. CROSBY

The College of Agriculture of the University of Tennessee last year established short courses for teachers of elementary agriculture in connection with the Summer School of the South. The interest was very great. The results have been beyond expectation. These courses will be repeated this year, with added facilities. The object is not only to teach the elements of agriculture, but to give to teachers of rural elementary and high schools methods of presenting the subject. The courses are illustrated by field excursions, observations on growing crops and farm animals, practice in school gardening and plant propagation. These courses are open to all students of the Summer School.

I Agronomy. Principles and practice of modern agriculture, illustrated by stereopticon. Excursions to the Experiment Station farm. The most important cereal, forage and grass crops. Especial attention to the varieties, culture, improvement, and judging of corn. Crop rotations, especially such as are adapted to Southern conditions. Soils—their origin, chemical and physical composition, the bacteria which they contain, adaptability to farm crops, etc. Plant foods and the necessary elements, with particular regard to the properties and sources of those most important in agriculture. Five periods. Six weeks. Prof. Mooers.

II Animal husbandry. Types and breeds of farm animals—especial attention to those most suitable to Southern conditions; live stock judging—a study of the general conformation of animals for specific production; animal breeding—a general discussion of the principles of stock breeding, including the subjects of variation, selection, heredity, cross breeding, etc.; animal nutrition—the laws of nutrition, and a discussion of the physiology of the various body systems and the relation of a general food supply to their normal operations; the feeding of live stock—sources, composition, and digestibility of various feeding stuffs; compounding and balancing of rations, with especial reference to that which may be profitably produced upon Southern farms. Five periods. Six weeks. Prof. Morgan and Mr. Quereau.

III Bee-keeping. Life, history, habits and types of bees; handling, inspection and feeding; swarming; equipment of a model apiary; construction of hives; site, pasturage, feed, protection in summer and winter; improvement of apiary; queen rearing; enemies, diseases and reme-

dies; weak colonies; bee-keeping as a business; how to start; surplus honey, comb, extract; grading and care of honey; marketing and shipping; machine for extracting; general management; practical experience and excursions to apiaries. State Bee Keepers' Association. Five hours. Two weeks—June 23-July 3. Prof. Bentley.

IV Dairying. Practical lectures and demonstrations in butter making, separation of cream, testing milk and cream, and production and care of milk. Object of course to show the value of scientific dairying methods as applied to home and farm conditions. Five hours. Two weeks—July 6-17. Mr. Price.

V Poultry. History of domestic fowls; feeding; diseases and parasites, remedies; breeding; scoring and judging; house fixtures, location; incubators and brooders; feed and care of chicks; killing and dressing poultry. Five hours. Two weeks—July 20-31. Mr. Tyler.

VI Horticulture. Nature studies on the farm. Simple farm and garden lessons. A critical study of a course designed for use with third and fourth reader classes in country and village schools. It consists of thirty stories, each of which illustrates a principle of agriculture. The stories are to be used as reading lessons, and the pupil will be required to make observations and simple experiments, demonstrating the principle illustrated by the story. Accompanying the stories are special instructions for the teacher, outlining in detail a series of observations and practical exercises, with deductions to be made therefrom. The work will include the use of the school garden, and a plan for home gardening by the pupils. Five hours. Six weeks. Prof. Keffer.

VII Agricultural education. Adaptation of agricultural knowledge to public school uses and conditions; relation of agriculture to other common school studies; demonstrations in field and laboratory; adaptation of equipment to resources, environment and grade of school; lessons from the Station farm; agricultural arithmetic; agricultural literature; the museum; general scheme of agricultural education. Five periods. Six weeks. Prof. Main.

VIII Plant life. A beginner's course in plant form and structure, from seeds and growing plants, with simple experiments. No previous knowledge of botany required. Work adapted to nature study exercises for rural schools and for intermediate grades in city schools. Syllabi and exercises. Excursions. Five hours. Six weeks. Prof. Keffer.

IX Animal life. A general course on animal life, adapted to the needs of beginners and more advanced students, and designed to encourage a deeper interest in the study of the general types of animals, their classification, organization, functions, development, and habits; field and laboratory observation upon the development and habits of common insects, and the general relation of insects, beneficial and destructive, to their surroundings. Five hours. Six weeks. Prof. Morgan.

X Special lectures. (a) Dr. Seaman A. Knapp, three lectures—Agriculture in relation to national prosperity and wealth—June 25, 26 and 27; (b) Dr. Dick J. Crosby, five lectures—Agriculture defined, as a

science and an art; elementary, secondary, and collegiate; supplementing the text book in agriculture in primary and secondary schools; school agriculture and its relations to the community; boys' and girls' clubs; agriculture as it is taught in some public schools (illustrated with lantern slides)—July 13-16. (c) Mr. Joseph E. Wing, four lectures—Stories of country life in America and the Old World—July 20-23.

FORESTRY

PROF. KEFFER, MR. PRICE, MR. ZON, MR. RECKNAGEL, MR. SHERFESSEE, DR. SMITH

A course of class exercises by Prof. Keffer and of lectures on elementary forestry by members of the Forest Service of the United States Department of Agriculture: Forests in the life of the nation; influence of forests upon stream flow, health, climate, etc.; what forestry is; history of forestry; the national forest policy; forests of the world, especially of the United States; life of the forests; forest types (field studies); forest management (general, European, American); forest protection; the woodlot; wood utilization; lumbering; wood preservation; preservative treatment of farm timbers; forestry in educational work; future of American forestry; ways of cooperation, etc. Special instruction will be given in regard to forestry bulletins and other literature.

This very valuable course is made possible by the cooperation of the Forest Service of the United States Department of Agriculture.

GENERAL NATURE STUDY AND BIRD STUDY

DR. HODGE, MR. PEARSON

I Nature study. Lectures, excursions, laboratory exercises and round table conferences.

The purpose of this course is to develop a clear idea of the end in view in nature study, and with this, strength, resource and confidence, so that, wherever placed, a teacher may be able to organize the environment into a vital course—a course which shall awaken a living and permanent interest in nature, entering into their lives and enriching them and keeping them true to nature. The general field covered by Nature Study and Life will be dealt with so as to give most help where needed. Special attention will be given to relation of nature study to industrial and agricultural education and the problem of the home and school garden; prevention of insect damage; preservation of birds; conservation of forest and water resources and national health. Two sections. Each five hours. Three weeks—June 23-July 10. Dr. Hodge.

II Bird study. Lectures, illustrated with mounted specimens and stereoptical slides; text book work and field studies; feeding, nesting and migration habits; color of plumage, notes, economic value and habitat of common birds of the Southern states; interesting and rare bird forms. Special attention will be given to the most valuable books and literature on ornithology. Teachers taking the course will receive, free of charge, the leaflets of the National Association of the Audubon Society to assist

them in their school work. Two sections. Each five hours. Three weeks—July 13-31. Mr. Pearson.

PHYSIOLOGY AND HYGIENE

PROF. MULVANIA, MRS. DAVIS

I Motivity of the body. A thorough study of the complete motor mechanism, including nervous, muscular and oseous systems—their relations, functions and development. Lectures, laboratory and readings. Five hours. Six weeks. Prof. Mulvania.

II Nutrition. Digestive, circulatory and excretory systems; classification of foods, digestion, metabolism. Lectures, laboratory and readings. Five hours. Six weeks. Prof. Mulvania.

III Scientific temperance instruction. Elementary course. Oral instruction in physiology and hygiene, with special reference to effects of alcohol and tobacco; good health; emergencies; civic hygiene; physiology; control; effect of habits. Five hours. Two weeks—July 20-31. Mrs. Davis.

Mrs. Davis will give some open hour lectures. See Lectures.

GEOLOGY

DR. GORDON

I Principles of geology.

(a) The work of rivers; geologic and physiographic processes represented in the work of running water; some attention to the work of wind, waves and ice, as allied processes in the production of land and shore forms. Five hours. Six weeks.

(b) Vulcanism; volcanoes and allied phenomena as indicative of internal conditions and forces affecting the surface of the earth. Five hours. Six weeks.

In each course an intensive study will be made of a particular phase of geology as an introduction to a wider study of the subjects. Lectures and recitations supplemented by maps and models, slides and field studies.

GEOGRAPHY

DR. GORDON, MR. VOORHEES.

I Physiography. Origin and development of the surface features of the land. Lectures, readings, lantern slide illustrations and field excursions. Five hours. Six weeks. Dr. Gordon.

II. Elementary course in Meteorology and Climatology. Practice in observation of weather and in making records. Study of daily weather map and methods of forecasting. Lectures on storms, wind, etc. Textbook: Waldo's Elementary Meteorology (American Book Co.) Five hours. Six weeks. Mr. Voorhees.

III Geography for primary grades. Five hours. Six weeks.

IV Geography for intermediate grades. Five hours. Six weeks.

V Commercial and Industrial Geography.

Instructors to be announced later.

THE STUDY OF A CITY AND ITS RELATION TO THE WORLD

The city of Knoxville, one of the oldest towns in Tennessee and once the capital of the state, a commercial and manufacturing city of sixty thousand people, a railroad center, located on a navigable stream, in the heart of an important geographical division, surrounded by mines and quarries, offers abundant material for the best type of concrete lessons in geography and sociology. A systematic study of the city will be arranged, with lectures and visits to markets, churches, schools, hospitals, factories, mills, power plants, wholesale and retail houses, depots, lumber yards, marble quarries, etc. Personally conducted outings, two or three afternoons a week throughout the session. Notes, summaries, observations. Round table, lectures and discussions. Class conducted by Dr. Gordon and the instructors in geography.

PHYSICS

Dr. Patterson, Mr. Worthington

I General course adapted to needs of teachers of physics in elementary and high schools. Emphasis on method. The course is based on Cheston, Gibson, and Timmerman's Physics. Five hours. Six weeks.

II Laboratory course running parallel to Course I, and using Cheston, Dean and Timmerman's Laboratory Manual. The best methods of developing laboratory equipment, and of conducting a laboratory course; instruction in making simple apparatus. Five hours. Six weeks.

III Advanced course. Intensive study of a few selected chapters of physics. Special attention to the development of the electron theory. Among the subjects treated will be current-electricity, thermo-electricity; electrolysis, theory of ionization, electrical nature of matter, discharge through gases, radio activity. Five hours. Six weeks.

ASTRONOMY

Dr. Patterson

I Elementary course, discussing in detail the solar system, comets, meteors, stars and nebulæ; the evolution of the universe and the history of astronomy. Instruction will be given partly indoors with use of lantern slides and partly outdoors. Three hours—Monday, Wednesday, Friday. Six weeks.

CHEMISTRY

Prof. Hill, Mr. Morrell

The following courses are designed to meet the needs of high school teachers, both as to subject matter and method of teaching.

I General Chemistry. Lectures and experiments with simple apparatus; the elements and their more important compounds; special attention to the chemistry of every day life; acids, bases and salts; oxidation and reduction; fundamental theories and concepts of the science. Five hours. Six weeks.

II General Chemistry Laboratory. A series of representative experiments to train the student in laboratory manipulation, accuracy of observation, interpretation of observed phenomena, and keeping the notebook. This course accompanies and furnishes material for III. Five hours. Six weeks.

III Qualitative analysis. Recitations and laboratory work in the detection and separation of inorganic bases and acids. Five periods of two hours. Six weeks.

IV Quantitative analysis. Laboratory course and lectures in the gravimetric and volumetric methods in chemical analysis Five periods of two hours. Six weeks.

V Advanced work will be arranged to meet the needs of special students.

The chemical laboratories of the University of Tennessee are quite extensive and the work will be largely individual.

MATHEMATICS

Prof. Schmitt, Prof. Tate, Prof. Rhoton, Mr. Garrett.

I Arithmetic. For teachers of grammar and high school grades. Subject matter and methods. Two sections. Each five hours. Six weeks. Prof. Garrett.

II Algebra. Course covering work of the secondary school. Special emphasis on fundamental principles, showing the inter-relation of different subjects. Graphs, determinants and symmetry will be explained and used freely. Five hours. Six weeks. Prof. Schmitt.

III Geometry for beginners. First two books of geometry. Original exercises; subject matter and method of teaching. Five hours. Six weeks. Prof. Tate.

IV Plane geometry. Advanced work. Books three, four and five. Special attention to original exercises; subject matter and method. Five hours. Six weeks. Prof. Tate.

V Solid geometry. Textbooks, Wentworth's Plane and Solid Geometry, revised edition. Five hours. Six weeks. Prof. Garrett.

VI Plane trigonometry. Elementary. Five hours. Six weeks. Prof. Rhoton.

VII Analytical geometry. Five hours. Six weeks. Prof. Rhoton.

VIII Infinitesimal calculus. Five hours. Six weeks. Prof. Rhoton.

In all Prof. Rhoton's work, special emphasis will be given to graphic interpretation. Students may bring any text-books for reference. Class work independent of texts.

BOOKKEEPING

Bookkeeping will be taught by the Knoxville Business College. The system employed is the Twentieth Century Bookkeeping and Office Practice. No charge to students of the Summer School.

ENGLISH GRAMMAR, OLD ENGLISH, RHETORIC AND COMPOSITION

PROF. FULTON, PROF. BROWN

I Anglo-Saxon. A beginner's course. Drill on the principles of the language, to enable the student to continue the work without the aid of a teacher. Text-book: Smith's Old English Grammar and Exercise Book. Three hours—Monday, Wednesday, Friday. Six weeks. Prof. Brown.

II Anglo-Saxon. Advanced course. For those who have already done work in Anglo-Saxon. The course will be organized to fit the needs of the class. Two hours—Tuesday, Thursday. Six weeks. Prof. Brown.

III English grammar. The principles of English grammar; historical development of the language; the relation of grammar to other subjects; methods of teaching. Two sections. Each five hours. Six weeks. Prof. Brown.

IV English composition. Elementary. Daily short themes for personal expression, fluency and point; weekly longer themes for construction; survey of rhetorical principles in class; direction of individual work in regular hours for criticism. Five hours. Six weeks. Prof. Fulton and Prof. Brown.

V Studies in prose style. A critical analysis of prose masterpieces to illustrate and verify the principles of rhetoric. The authors studied will include DeQuincey, Huxley, Hawthorne, Arnold, Macaulay, Newman, etc. Collateral reading in Brewster's Representative Essays on the Theory of Style. The course presupposes a thorough grounding in the principles of composition. Five hours. Three weeks—June 23-July 10. Prof. Fulton.

VI English composition in secondary schools. Lectures, reports upon assigned readings, and class discussions. The course deals with composition work appropriate to the high school. Topics considered: History of the teaching of English in American schools; the object of teaching composition, and the qualities to be developed in the pupil; relation of composition to grammar, to the English classics, and to other subjects; the selection and assignment of exercises; criticism of compositions. Five hours. Three weeks—June 23-July 10. Prof. Fulton.

LITERATURE

DR. SMITH, PROF. CLARKE, PROF. MCVEA, DR. HENDERSON, PROF. FULTON, DR. GRIGGS

I American literature. The significance of the writings of the Colonial period; a brief study of the Knickerbocker school; the Renaissance of New England; Longfellow, Whittier, Hawthorne, Lowell, Emerson. Object of the course, literary discrimination. Text-book: Page's Chief Poets of America. Five hours. Six weeks. Prof. McVea.

II The development of English prose style from the fourteenth century. Special consideration of the following writers: Mandeville, Mallory,

Sir Thomas Moore, the translations of the Bible, Sidney, Lily, Bacon, Browne, Walton, Milton, Taylor, Bunyan, Defoe, Swift, Addison, Fielding, Johnson, Goldsmith, the novelists of the latter part of the eighteenth century. Text-book: Minto's Manual of English Prose. Five hours. Six weeks. Prof. McVea.

III The dramas of Robert Browning. A critical study of each of Browning's dramas, with a consideration of his aim and status as a dramatist. Five hours. Six weeks. Prof. Clarke.

IV Keats, Shelley and Byron. A study of the representative writings of these poets, with critical inquiries and appraisements. Five hours. Six weeks. Prof. Clarke.

V Development of the English drama from the earliest medieval attempts to the end of the eighteenth century. Shakespeare will be considered as a dramatist and a factor in the development of the English drama, not as a poet.

The plays selected from Shakespeare will be chosen to illustrate the various steps of Shakespeare's development. Those intending to take the course should read before coming *Love's Labour's Lost, Richard III., Romeo and Juliet, Twelfth Night, Othello, The Tempest.* Students should bring a good edition of Shakespeare. Five hours. Three weeks—June 23-July 10. Prof. Fulton.

VI The contemporary drama. Evolution of the contemporary drama; the technique of the contemporary drama; the ethics and philosophy of the contemporary drama; Henrik Ibsen, romanticist; Henrik Ibsen, realist; Henrik Ibsen, philosopher, dramatist, and man; Gerhart Hauptmann, social idealist; George Bernard Shaw, his career; George Bernard Shaw, his art and philosophy; Oscar Wilde, romanticist and comic dramatist; Maurice Maeterlink, mystic; Maurice Maeterlink, dramatist; Stephen Phillips and the poetic drama; Edward Rostand and the return of romance; the American drama. Five hours. Three weeks—June 23-July 10. Dr. Henderson.

VII English poetry since 1830. Lectures and studies of assigned texts. Work based upon representative selections from Tennyson, Robert Browning, Clough, Rossetti, Arnold, Swinburne, and Kipling. Text-book: Page's British Poets of the Nineteenth Century. Three weeks—July 13-31. Dr. Smith.

VIII Shakespeare. Lectures with parallel readings. Review of the most recent Shakespearean literature; intensive study of *As You Like It, Hamlet, The Tempest.* Methods in teaching Shakespeare in different grades will be discussed, and plans suggested for the study of Shakespeare in reading circles and literary clubs. Text-book: Any annotated edition of Shakespeare, the Arden edition (D. C. Heath & Company) preferred. Five hours. Three weeks—July 13-31. Dr. Smith.

IX Divine Comedy of Dante. Five lectures: The medieval world and the life of Dante; the problem of the Divine Comedy; the Inferno; the Purgatorio; the Paradiso. These will be given at open hours during the second week. Dr. Griggs.

LITERATURE OF THE BIBLE

DR. HULLEY

The Prophets of Israel. Who were the prophets? Why so named; their work; their preparation; their relation to other classes; their part in the history of Israel; their achievements; the literature left by them; its form; its historical background; the messages of the prophets to the men of their day; permanent elements from their work that have come down to us; how to study their writings; their chronological order; the rise and decline of prophecy; the great ideas of the prophets. Two sections. Each five hours. One week—July 20-24. Dr. Hulley.

LATIN

DR. MILLER

I Caesar. A course for teachers of Latin. The members will take turns in teaching the class under the supervision of the instructor in charge. Discussion of Latin forms, principles of syntax, subject matter, side-lights, books and other helps serviceable to teachers, methods of presentation and points for emphasis in elementary instruction. Three hours. Six weeks.

II Virgil. A course for high school teachers, conducted in the same way as Course I. Discussion of problems pertaining to the teaching of the Aeneid—metrical reading, literary interpretation, style. Two hours. Six weeks.

III Latin prose composition. Exercises in turning English into Latin. Primarily for teachers of high school Latin. Two hours. Six weeks.

IV Catullus. Lectures only. The poems of Catullus will be read and interpreted. Emphasis will be laid upon the aesthetic and literary side of the poet's work and his place in the history of literature. Three hours. Six weeks.

V Tacitus. Annals. Lectures only. A study of the transition from Republican to Imperial Rome, followed by the reading and interpretation of the First Book of the Annals of the greatest of Roman historians. Two hours. Six weeks.

Students should bring their editions of Caesar, Virgil, Tacitus, Catullus, and a Latin grammar.

GREEK LANGUAGE AND LITERATURE

DR. FAY.

I. For beginners. Recommended to teachers of Latin who desire to make special study of the language and people that so powerfully affected Rome, and to all who would extend their knowledge of the large Greek element in English. Only so much of forms and syntax as is absolutely essential to read simple prose, but thorough work as far as it goes. Goodell's The Greek in English (H. Holt & Co.), Moss's First Greek Reader (Allyn and Bacon). Five hours. Six weeks.

II. For second year students and in continuation of course one.

Lucian's Vera Historia (Macmillan, agent for the publisher, Bell). Three hours. Six weeks.

III Euripides. Blakeney's Alcestis and Gwyther's Bacchae (Macmillan, agent for the publisher). Two hours. Six weeks.

IV. Greek drama in English. Readings. Students should have the Athenian Drama, (three volumes, Longmans). Instructor will read also from Browning's Balaustion's Adventure, Aristophanes' Apology and Agamemnon, and Mrs. Browning's Prometheus Vinctus. Five Hours. Three weeks—July 13-31.

GERMAN

PROFESSOR DARNALL

I Elementary German. Grammar; written and oral exercises; translation. Voss' Essentials of German (H. Holt & Co.), Niebuhr's Heroen Geschichten; Campe's Robinson der Jungere. Five hours. Six weeks.

II Advanced German. Translation into English; sight reading; composition exercises. Schiller's Der Neffe als Onkel; Heyse's Die Hochzeit auf Capri; Seidel's Leberecht Hühnchen. Three hours. Six weeks.

III Lectures on the history and development of the Niebelungenlied and Parzival, with outlines of Richard Wagner's music-dramas on these subjects. Two hours. Six weeks.

FRENCH

DR. YOUNG

I Elementary French. Grammar, composition, phonetics and translation. Books: Fraser and Squair's French Grammar and Reader; Aldrich and Foster's French Reader. Five hours. Six weeks.

II Advanced course in grammar (Fraser and Squair's); composition; conversation; translation; Vreeland's French Prose Composition. Merimeè's Colomba; Bazin's Les Oberle. Three hours. Six weeks.

III French drama in the nineteenth century. Lectures in English with reading of representative plays, as Victor Hugo's Hernani, Dumas' La Question d' Argent; Rostand's Cyrano de Bergerac. Two hours. Six weeks.

SPANISH

DR. YOUNG

Elementary Spanish. Grammar and translation. Hill and Ford's Spanish Grammar. Matzke's Spanish Reader. Five hours. Six weeks.

HISTORY

DR. MOORE, DR. RILEY, PROF. TURNER, PROF. HOSKINS, PROF. MYNDERS, DR. MILLER, DR. FAY

I American history. From the Revolution to Jackson's administration. The class will treat the forces that produced the Federal Constitution; relation between the state and the Federal government; the influence

of the French Revolution on social and political life; the economic effect of the cotton gin and the spread of the plantation system; the protective tariff and growth of manufactures. Five hours. Six weeks. Prof. Turner.

II Political history of the South. Study of the South in colonial politics; the political history of the Confederate states; the South in national politics. Lectures, class discussions and reports. Five hours. Four weeks. July 6-31.

III Methods of teaching history. Five hours. Four weeks—July 6-31. Dr. Riley. See Education. .

IV Current international events. The class will seek, through informal lectures and discussions, to form and express intelligent opinions upon international news in the light of history and international custom and law. Teachers may thus become better equipped to answer questions likely to be asked by pupils in the higher schools. Five hours. Six weeks. Prof. Turner.

V Early and medieval English history. From the beginning of English national life to the close of the Wars of the Roses. A study of the origin of the political, social, religious and industrial institutions of England. Five hours. Six weeks. Prof. Hoskins.

VI History of England in the eighteenth and nineteenth centuries. A study of modern England, with special attention to the expansion of the British Empire and England's position among modern nations. Five hours. Six weeks. Prof. Hoskins.

VII History of Western Europe in the Middle Ages. The church universal; the world state, and feudalism. The civilization of the Romans overwhelmed by the barbarism of invading Teutonic tribes; development of the new Teutonic civilization, with institutions showing equally their derivation from Roman types and their adaptation to current conditions; the church Catholic, or universal, with its Christian religion, its orthodox creed and its ecclesiastical heirarchy; Monasticism, an effective agency in the spread of Christianity and the promotion of culture; the idea of the World State and its partial realization in the Empire of Charlemagne; its dissolution; Feudalism—an extremely decentralized form of state organization, politically the crowning institution of the Middle Ages; its service to civilization; its decline as the civilization which it had fostered outgrew it. Five hours. Six weeks. Dr. Moore.

VIII Greek history. A review of the most important features in Greek history with special attention to the methods of teaching it in the high school. Oman's History of Greece (Longman's). Five hours. Three weeks—June 23-July 10. Dr. Fay.

IX History of Rome. The political and institutional history of Rome, from the death of Caesar to the fall of the Empire. Five hours. Three weeks—July 13-31. Dr. Miller.

X History of Tennessee. A topical study of the settlement and growth of the state of Tennessee. Emphasis on methods of teaching the subject in common schools. Five hours. Six weeks. Supt. Mynders.

PRINCIPLES OF ECONOMICS

DR. MOORE

Introductory; stages of industrial development; sketch of the industrial history of the United States. Wealth and flow of income; distinction between public and private wealth; the economic problem—to increase production and to provide for the equitable distribution and the best use of products. The beginning of economic theory: Adam Smith and his followers; dominance of individualism and economic philosophy; this philosophy in the light of English economic history; socialistic critics and the destructive school; influence of modern sociological ideas upon economic philosophy; the economic motive—appeal to the selfish desires of private wealth. Consumption: human wants and the laws of their growth and satisfaction. Production: economic goods; form utilities, place utilities, time utilities; factors of production—land, labor, capital; division of labor; large scale production. Theory of exchange: domestic and international trade; money and credit; the accumulation and investment of capital; substitution of capital for labor. Distribution: the laws of rent, of wages, of interest; the empirical process of distribution; the laws of competition; the theory of value; the theory of monopolies.

Conclusion: current problems in economics.

HOME ECONOMICS

MISS TUTTLE, MISS BUQUO

I Foods. A study of the classification of food materials as to composition, nutritive value and relation to the body. Combustion, fuels and cooking apparatus. The right application of heat in cooking and effect on each food principle. Cooking processes, methods of work and the proper combination of food materials. Number of students limited to fourteen. Two hours daily; theory and practice. Six weeks.

II Advanced work in cookery; designed to supplement and continue Course I; open to those who have previously studied the subject. Dietetic value of foods; invalid cookery; serving of meals. Lectures and discussions in dietetics, serving; also the theory and practice of teaching domestic science. Limited to fourteen students. Two hours daily. Six weeks.

Students in home economics pay a laboratory fee of five dollars.

PSYCHOLOGY.

DR. BREESE, DR. OGDEN

I Introductory Psychology. An analytical study of mental phenomena, with special attention to accurate observation and description. A general account of the subject matter of psychology. Five hours. Six weeks. Dr. Breese.

II Genetic Psychology. A study of mental life from the point of view of development. Special attention given to the applications of psychology to education. Five hours. Six weeks. Dr. Breese.

III Sensation and Perception. A detailed and comprehensive treat-

ment of the first phase of a complete course in psychology. The main topics for discussion will be as follows: The nervous system—development and function; the psychology of sensation—vision, audition, taste, smell, pressure, temperature and pain, theories of sensation; the psychology of perception—the perception of space, tactual, auditory and visual, the perception of time, the perception of unity. These topics will all be illustrated by practical demonstrations. Five hours. Six weeks. Dr. Ogden.

IV The Psychology of Art. This course is intended for teachers of, and those especially interested in, art, drawing and modeling. The problems of painter, sculptor, designer and architect will be considered from a psychological point of view. In particular the optical problems of artistic representation, color schemes, proportion and symmetry will be discussed and illustrated by lantern projections and other reproductions of works of art selected for the purpose. Textbook: Hildebrand's Problem of Form in Painting and Sculpture. Five hours. Six weeks. Dr. Ogden.

EDUCATION.

Dr. Balliet, Dr. Gregory, Dr. Ogden, Supt. Mynders, Dr. Riley, Supt. Evans, Dr. Hailmann, Dr. Claxton, Prof. Tate.

I. Principles of Teaching. The significance of teaching; the significance of education, instruments, cultural and disciplinal; the appeal to consciousness; individual differences; the training of the memory, instincts, emotions and will; the process of reasoning; the function of the elementary school, the secondary school and the high school. Textbook: Thorndike's Principles of Teaching. Five hours. Six weeks. Dr. Ogden.

II. Methods of Teaching History. Objects and methods of work and principles involved in teaching history in the public schools; model lessons; coordination of history with other subjects; its place and importance in the curriculum; necessary equipment; assigment and preparation of the history lesson; class instruction. Lectures, class discussions, and reports. Five hours. Four weeks—July 6-31. Dr. Riley.

III. Practical Teaching. Some fundamental principles of teaching and their practical application in elementary and secondary schools. A discussion of some essential problems of practical school work. Lectures, discussions and assigned readings. Five hours. Three weeks—June 23-July 10. Dr. Claxton.

IV. Method of Teaching Geography. Illustrated by type lessons in home geography and the geography of America and Europe. Five hours. Three weeks—July 10-31. Dr. Claxton.

V. School Management. School organization, grading, discipline, programs of recitations, recreation, parents' meetings. Special attention will be given to rural schools. Five hours. Three weeeks—June 23-July 10. Supt. Mynders.

VI. Rural School Problems. Special problems confronting rural school teachers in the South. Special attention will be given to methods

of teaching in rural schools and supplementary work for same. Five hours. Three weeks—July 13-31. Supt. Mynders.

VII. Problems of the High School. A brief summary of the history of secondary education; a comparative study of modern high schools in Europe and America, and the course of study in the high school—matter and method; special problems of high schools in the South. Textbook: Hall's Youth; Its Education, Regimen and Hygiene. Free use will be made of American and European school reports. Five hours. Six weeks. Dr. Claxton. Prof. Tate.

VIII. Froebel's Philosophy of Education. The application of the principles of Froebel to primary, grammar and high school education. The object of the course is to unfold a method of teaching founded on a study of the child as Froebel saw it, a method which follows the path of least resistance. A practical application of Froebelian principles to the school room; elementary phases of subjects presented in an inductive, semi-lecture, semi-round-table plan. Five hours. Five Weeks—June 29, July 31. Dr. Gregory.

IX. Froebel's Philosophy: Advanced Course. A deeper and more systematic study of the subject, in which a textbook, or syllabus, will be used. Five hours. Five weeks—June 29-July 31. Dr. Gregory.

X. Pre-Christian Education. Introductory to Dr. Hailmann's course in the history of modern education. Five hours. One week—June 23-27. Dr. Claxton.

XI. History of Modern Education. Historic background; the night of authority; the dawn of reason; the demand for comprehensiveness, the return to nature; exploration versus explanation; the rescue of humanity; individual and social self-activity; the emancipation of the profession; life-efficiency: the unity of head, heart and hand. Five hours. Three weeks—July 13-31. Dr. Hailmann.

XII. Supervision of Town and City Schools. The sphere of influence; special conditions; the school authorities; expert teaching; expert supervision of work; the curriculum and how improved; the public school child; special function of the principal; the school building; the public high school. Five hours. Two weeks—July 20-31. Supt. Evans.

XIII. The kindergarten and the primary school. "Come, let us live with our children;" the right of childhood; the school is life; from experience to conduct; the symbolisms of self-expression; song and story; learning by doing; love of nature; orchestration; knowledge, skill, purpose; the course of work; fads and essentials. Five hours. Three weeks—July 13-31. Dr. Hailmann.

XIV. Principles of Education. A series of lectures and lessons in which the general principles of education contributed by the various sciences will be discussed and their applications indicated. Among the chief topics to be considered will be the following: The brain and education; localization of brain functions and its bearing on physical education, on manual training, on the acquisition of language, etc.; the order of

maturing of the nervous system; plasticity, and nascent periods and their bearing on education; adolescense and the problems of secondary education; apperception, memory, imagination and habit in their bearing on education; feeling, volition and ethical training; educational aims and ideals; principles which must determine the course of study. Five hours. Three weeks—July 13-31. Dr. Balliet.

XV. Methods of Teaching. A series of lectures and informal discussions of the various approved methods of teaching reading, composition, arithmetic and geography.

Reading: Good habits of reading and how to develop them; eye-movements; perception of words and letters; the word, the sentence, and other methods; the respective functions of silent reading and oral reading; the place of phonics; speed in reading; what to read.

Composition: How to secure fluency and ease; correction of errors; selection of subjects; the relation of oral to written composition.

Arithmetic: How the conception of number is gained; the function of objective illustration; elimination of obsolete parts; how to teach fractions, decimals, percentage, mensuration and commercial arithmetic; speed and accuracy.

Geography: Home geography—its place and function; phases of physiography which may be taught in elementary schools; function of map drawing; casual relations in geography; use of textbook; mathematical geography—what to teach and what to omit; the course of study; relation to history. Five hours. Three weeks. Dr. Balliet.

XVI Agricultural Education. Five hours. Six Weeks. Prof. Main. See Agriculture VII.

RECITALS AND CONCERTS.

I. Six concerts by Maud Powell, violinist; Elizabeth Dodge, soprano; Margaret Keyes, contralto; Daniel Beddoe, tenor; Herbert Witherspoon, basso.

II. Four or five organ and choir recitals in Knoxville churches. These will be of a very high order of excellence, and will be given on Saturday and Sunday evenings at times to be announced.

The purpose of these concerts and recitals is to offer to the students of the Summer School and the people of Knoxville music of the very best kind, both for entertainment and for educational value. To this end the artists have been selected with greatest care. Herbert Witherspoon, of the Metropolitan Opera House, is known as America's greatest concert basso. Daniel Beddoe ranks easily among the first tenors. Elizabeth Dodge is probably our first concert soprano. Margaret Keyes is one of the best contraltos, with a very powerful voice. Maud Powell is by common consent America's greatest violinist and the first woman violinist of the world. Admission to all these lectures, concerts and recitals is free to members of the Summer School.

LECTURES AND READING.

Besides the lectures of which the subjects are given elsewhere, there will be public open hour and evening lectures and recitals, as follows: (1) Five evening lectures by Dr. Edward Howard Griggs on the great moral leaders: Socrates; St. Francis of Assisi; Carlyle; Emerson; Tolstoi. Dr. Griggs' five lectures on Dante are listed under literature. (2) Four or five lectures by Dr. Lincoln Hulley. (3) Three lectures by Edith Smith Davis, director and superintendent of scientific temperance investigation and scientific temperance instruction in public schools and colleges, for the National and the World's Christian Temperance Union: The rise and development of scientific temperance instruction; The clearer vision; The temperance work abroad, or The freedom of truth. (4) Two or three lectures by Dr. Seaman A. Knapp, director of cooperative agricultural experiments of the United States Department of Agriculture. (5) Several illustrated lectures on bird life by Prof. T. Gilbert Pearson, secretary of the National Audubon Society. (6) Three lectures by Dr. Charles Sprague Smith, managing director of the Peoples Institute: Iceland and its literature: Brotherhood; Progressive democracy. Several lectures by members of the Summer School faculty; one or more groups of illustrated lectures; several lectures by noted statesmen, educators and artists, yet to be announced; four or five readings by Dr. and Mrs. Southwick.

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Superintendent of Schools, Winnebago County, Ill.

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