town. He served as sheriff of Tioga County from 1795 to 1799. He died in 1802 and was the first to be buried in the Baptist burying ground.

Dr. Amos Park came from Orange County in 1793 and erected the first frame house in Newtown on the bank of the river near what is now High Street, Elmira. He was a preacher by avocation, the first in Newtown.

A county medical society existed in Seneca County at an early date, but the organization was abandoned about 1840. Records of this pioneer organization are lost but the transactions of the State Medical Society show that at a meeting February 6, 1810, Dr. Oliver C. Comstock presented his credentials from Seneca County and took his seat. In 1829 the state society acknowledged receipt of two dollars from the Seneca County society through Dr. Caleb Loring, its secretary. After a period of twenty-five years the present society in the county was organized August 1, 1865. The county's first physician was Dr. Silas Halsey, who shortly after the Revolution started from Connecticut in a skiff, stopping at Lodi Landing, which he called home.

The Tompkins County Medical Society was organized in 1818, but the records of early officers and meetings is lost. The organization continued until 1844, when regular meetings ceased. Then in October, 1862, there was a revival of interest and the society reorganized.

The Schuyler County Medical Society was formed at the Montour House, Havana, December 29, 1857, with Dr. Nelson Winton as first president.

The Schuyler County Homeopathic Medical Society was organized in Watkins July 9, 1872, with Dr. William Gulick as first president. This organization calls attention to the controversy which in early years waged between Homeopathics and Allopaths. The Homeopathic branch of the medical profession did not acknowledge "any as regular physicians except those who have received a medical degree or license from some institution authorized by law to confer such a degree or license."

Thus in this state Homeopaths were legally qualified to demand and retain membership in the county medical societies, but

because of intolerance of the Allopathic physicians they were compelled to apply to the Legislature for relief. Therefore, the Legislature, during the session of 1857, passed an act incorporating homeopathic medical societies under the general law, passed April 10, 1813.

The Yates County Medical Society was formed March 4, 1823, with twelve members, and with Dr. Joshua Lee, president, and Dr. John Hatmaker, secretary.

Among the first societies in the state was the Tioga County Medical Society, organized October 13, 1806, with Dr. Amos Park, president, and Dr. William Benson, secretary. On the following December 24 the society met and adopted a fee bill which is of interest in comparison with the schedule of prices in vogue in 1932. All members agreed to abide by the schedule, which follows:

Amputations: Femur, $25; os humeri, $20; reducing simple fracture, $5; reducing compound fracture, $6; dislocation femur, $8; dislocation os humerus, $10; lancing abcess, 50 cents to $3; introducing catheter, $1; trepanning, $20; lithotomy, $30; introducing suture, 25 cents; obstetric operations, natural, $4; obstetric operations, preternatural, $5; introducing trocar, $2; reducing hernia, $5; amputating breast, $10; phymosis paraphimosis, $1; introducing the variola, $2; dressing wounds in general, 50 cents to $1; consultation with any gentleman of the profession, $5.

Indicative of the strong beliefs of early doctors is the following resolution adopted by the Tioga society in 1858:

"Resolved: That there is an orthodox faith in medicine, as well as in theology, and while each allows great latitude of opinion, there is a point beyond which none can step without sacrificing the benefits which may flow from either.

"Resolved: That in our opinion Spiritualism is but the culminating point of a delusion which had its beginning in mesmerism, its progress through homeopathy: therefore, those who have given their countenance to the latter are responsible for the effects of the former."

America's first woman physician appeared on the all-male medical horizon more than eighty years ago in Central New York, when Miss Elizabeth Blackwell was admitted to the old Geneva Medical College as a result of what male students believed to be a hoax. The story of that first woman doctor is intertwined with the history of the first medical schools in the area.

The dean of the Geneva school, on receiving Miss Blackwell's application for admission to the regular course, was much troubled and to dispose of the unprecedented request, decided to leave the matter of admission to the student body. But the students, thinking the request was a hoax, returned a hilarious chorus of "ayes." Then, in the spirit of sport, they drew up a solemn document pledging themselves to welcome the woman medic with all courtesy and consideration. To their amazement she came in the flesh. The students kept their word, greeting her cordially, but townspeople were scandalized.

Miss Blackwell's appearance into the realm of medicine recalls the history of early medical schools. In 1824 Dr. Arastus Tuttle, Auburn prison physician, began such a school in that city, continuing educational lectures to students until his death five years later. Associates sought to carry on, but the establishment of a medical department at Hobart College, Geneva, influenced the Legislature to deny Auburn's application for a college charter and the project dropped.

But the Geneva College was instituted by Legislative Act of 1834, and at the start classes were conducted at Hobart. In 1841, following an appropriation of $15,000 from the state, the college was established in a building on the east side of Main Street. The most prosperous period for the Geneva institution was from 1840 to 1850. The school was discontinued in 1872, going to form the medical department of Syracuse University. In 1877 the old building was destroyed by fire. In its career the college graduated 632 physicians, including America's first woman doctor.

The Geneva College's woman graduate, Miss Blackwell, later founded the Women's Medical College of Philadelphia, the first women's medical school in America. So great was the prejudice against women physicians that a few years later when Miss

Blackwell's sister applied for entrance to the Geneva Medical College, her request was denied.

A distinguishing event in the history of the medical profession of Central New York was the establishment at Watkins Glen of one of the most famous spas in the world—the Glen Springs, known as the Bad Neuheim of America. The institution was developed by William Elderkin Leffingwell, born in Aurora, New York, July 10, 1855, and who died at the Glen Springs October 12, 1927. Since that time the great health resort has been under direction of his son, William M. Leffingwell.

From about the year 1885 to 1890 the method of treating chronic diseases of the heart, commonly known as Neuheim Treatment, was brought prominently to the attention of physicians through the writings of Dr. Schott, Prof. Bencke and others. The chief hydrotherapeutic measure employed is the immersion of the patient in the full bath of natural ferruginous alkaline saline water, the most important medicinal constituent, of which are the chlorides of sodium, calcium, magnesium, potassium and ammonium; iron bicarbonate, sodium bromide and carbonic acid gas. The attention of Dr. Leffingwell had been attracted to the region about the head of Seneca Lake by the reputation of the Deer Lick spring and traditions of other saline springs in the vicinity. The medicinal properties of the Deer Lick spring had been recognized since the time of early settlers and over seventy-five years ago the project to utilize this spring under medical supervision was undertaken by the establishment of a water cure.

In 1889, while Mr. Leffingwell was investigating the property with a view to the establishment of a health resort along the lines of the European spas, an analysis of water from a well located near the Deer Lick spring, which had been drilled and abandoned many years before was brought to him by the late George G. Hill.

The analysis had been made by Prof. Lattimore of the University of Rochester at the time the well was drilled by prospectors boring for oil. The oil venture failed and Prof. Lattimore's analysis shattered the hopes of promoters as to the value

of the brine for making salt, on account of the large percentage of chloride of calcium it contained. At the close of the analysis Prof. Lattimore said:

"This brine differs from all I have ever analyzed and also I think from nearly all whose analyses have been reported, in the very large percentage of calcium chloride."

The similarity of the waters from this well to the Neuheim waters, especially to Sprudel No. 15, together with the valuable medicinal properties of Deer Lick spring for drinking purposes, led to the purchase of the property now known as the Glen Springs. The possession of these springs, and the fact that this was the first establishment in America to recognize the value of the Neuheim Treatment and inaugurate its use, has associated with the Glen Springs the name "The American Neuheim."

Near the Glen Springs, located above Watkins Glen, is a nine hole golf course, over 3,000 yards in length. This course is owned and operated by the Glen Springs, which resort occupies an estate of 1,100 acres, comprising the golf course, dairy farm, vegetable gardens, poultry farm and acres of pine forest with miles of trails for hiking.

"A fanatics folly." That was what the Clifton Springs Sanitarium, with its recognized leadership in the world of medicine both here and abroad, was called when a deeply religious physician came into the wilderness in 1849 and set up a "water cure house." The physician was the late Dr. Henry Foster. He had $1,000 in cash, his life savings; robust health, driving energy and a conviction that the Almighty had appointed him to carry out a great humanitarian work.

Visible evidence of how that combination of assets served him is the great sanitarium and clinic of today, with its twenty-five buildings, 1,075 acres of land, golf course, tennis courts and equipment valued at $2,225,000. The sanitarium today has a capacity of 475, the Woodbury Building or clinic and hospital building, opened in 1927, alone having ninety-six rooms. There are in normal times twenty-five physicians, fifty resident institutional nurses. seventy-five special nurses on call and 100 student nurses. It is the second largest institution of its kind in the

world, operating without profit for the benefit of ailing mankind. It is five institutions rolled into one—hospital, clinic, sanitarium, first class hotel and amusement resort.

It has its own bakery, carpenter, electrical and machine shops and dairies. It owns two farms of 1,000 acres. And all this big institution must operate, under terms of a deed of trust, without profit. If money is left over after all operating expenses and improvements are paid, it must be used for charity. Records show that in the past decade the cost of charity work mounted from $70,000 to $125,000. Up to the time he conveyed it to "all humanity" by the deed of trust in November, 1881, the sanitarium and all its properties belonged to Dr. Foster alone. Now its affairs are in the hands of a Board of Trustees of thirteen members, all serving without pay.

What is now Clifton Springs was a spot long avoided by Indians and whites alike, because of the peculiarly disagreeable odor of its sulphur springs. The first settler there was John Shekels, who built a log house in 1800. By 1828 both the whites and Indians had come to recognize the medicinal value of the springs. In that year there was a log bathhouse near the main spring on the site of what is now Pierce pavilion. When Dr. Foster came he found also a tavern, blacksmith shop and a half dozen dwellings. On February 24, 1850, a joint stock company was organized to finance the construction of the first "water cure" building on ten acres of land which Dr. Foster had secured for $750. Total initial capitalization was $10,000.

The doctor was born January 18, 1821, one of five children of a Norwich, Vermont, linseed oil manufacturer. He died January 15, 1901. From 1850 to 1901 he was superintendent of the institution. His widow filled that position from 1901 to 1908. Since then the following have been in charge: Dr. Charles P. Emerson, 1908-12; Dr. James B. Munford, 1912-14; Dr. Malcolm S. Woodbury, 1914-21; Dr. David Bovaird, 1921-23; Dr. John A. Lichty, 1923 to date.

CHAPTER XVIII

AGRICULTURE.

DIVERSITY OF CROPS—SOIL—VEGETABLES—GRAIN—HAY—POTATOES—DAIRYING—LIVE STOCK—POULTRY—FRUIT—WINE INDUSTRY—THE GRANGE—4H CLUBS.

Diversity of crops, nearness to markets, good roads, capable marketing organizations, 200 granges, a Farm Bureau for virtually every county, presence of the State College of Agriculture at Ithaca and the State Experiment Station in Geneva all combine to make agriculture the great industry of Central New York. The fertility of the soil was first revealed to the whites when soldiers in Sullivan's army invaded the region and marveled at the crops of the Indians. These soldiers were the first advertisers of the farming resources of the district.

The agriculture of a region is largely determined by its topography, climate, soils and markets. The surface in the northern portion of Central New York is undulating or gently rolling. The elevation is from 400 to 800 feet above sea level and the growing season averages about 160 days. The annual rainfall averages about forty-seven inches. During the five months from April to August it averages about sixteen inches. The soils have from a medium to a high lime content and are usually very well drained. They can be plowed deeply, early in the spring.

The local cities of Canandaigua, Geneva, Waterloo and Auburn are good local markets and business centers. Roads surfaced with macadam or cement connect the cities and larger towns. The dirt roads are usually good. These farms are only a few hours distance by rail from such large cities as New York, Philadelphia and Pittsburgh. The efficient railway systems of the New York Central, Lehigh Valley, and Pennsylvania serve this region. There are few farming regions in the world with so many favorable conditions.

New York State grows about twice as many acres of cabbage as its nearest competitor, Wisconsin. Central New York furnishes nearly one-half of the New York State crop. Ontario County produces more cabbage than any other county in the United States. In recent years Seneca Castle has shipped more cabbage than any other station. Much of the cabbage grown in this region is used for making kraut, both for local and foreign consumption.

Alfalfa, like cabbage, does best where the lime content is high. Central New York produces nearly one-half of the state's alfalfa. Onondaga County has been growing alfalfa since 1812 and grew over 33,000 acres in 1919. There are many low rounded hills in this region known as drumlins. Alfalfa thrives on these hills and usually pays better than other crops. When grown on the more level land alfalfa competes with beans and wheat. There is competition, too, with the more intensive crops like potatoes and cabbage.

One of the important crops in the vicinity of Skaneateles Lake is the teasel. It has been grown there for almost 100 years. This is the only place that the teasel is grown in the United States, except in a small way in the State of Oregon. The heads are used in raising a nap on cloth. The teasel is a bi-annual plant and the yield in this region is about 100,000 heads per acre.

The nursery business about Geneva ranks next in importance to the Rochester area. The growing of orchard fruits in a commercial way requires an unusually well drained deep soil and protection from frost injury. The climate in this region is tempered by both the Finger Lakes and the Great Lakes. On many farms in this region conditions are favorable for growing fruits. They are usually grown on general farms in combination with beans, cabbage, wheat, hay, and other crops. Near Geneva there are a number of large farms set out entirely to fruit. The soil and climatic conditions at the State Experiment Station Farm at Geneva has been favorable for orchards and many very valuable horticultural investigations have been carried on here. Ontario County has about the same number of fruit trees as has any one of the leading fruit counties in the Hudson Valley.

Although the region contains less than 10 per cent of the farm land of New York State, it grows about 30 per cent of the bean acreage. After harvesting the beans only a little harrowing is usually necessary in order to fit the ground in excellent condition for wheat. Plowing for the wheat is thus saved and the yield of wheat after beans is better than after oats. The region grows about 30 per cent of the state's wheat. Wheat requires productive land, well supplied with lime and a fairly long growing season. Oats can be grown where the soil and climate will not grow wheat profitably.

Sheep are commonly kept in regions growing beans. They make good use of bean pods and the cull beans which are commonly not saleable. Sheep fit into the labor schedule on farms growing intensive cash crops better than do dairy cows. Central New York keeps twenty-one per cent of the state's sheep and only seven per cent of the dairy cows.

Seneca and Cayuga Lakes extend south into the southern New York hill region where the elevation at the highest point is over 2,000 feet above sea level. Such hilly topography has made the picturesque gorges and water falls near Watkins and Ithaca. In this picturesque region the topography is less favorable for agriculture and the soils have less lime and are not nearly as well drained as are the soils toward the north. One of the poorest soils which is quite widely distributed over the hill counties is called the Volusia silt loam. Its subsoil is so compact and impervious that water moves through this soil very slowly. It is usually sour or acid. The buildings and fences on this soil type are generally in poor condition and many fields are unused. It seems that each year more of this land is abandoned.

The most important crop produced on this soil is timothy and red-top. Buckwheat and oats are commonly grown. Much of this land is used for pasture. This region was originally timbered with an excellent growth of white pine, birch, maple, beech, etc.

Closely associated with the Volusia soil is a much better drained soil known as the Lordstown. It occupies the better

drained slopes and crests of the hills. On this soil potatoes are an important cash crop.

All of the counties in the region ship potatoes. The cost of transporting potatoes in proportion to their value, is high, and most of the cities and towns in New York State are supplied locally. Thus Onondaga County grows a large acreage of potatoes to supply Syracuse. Ontario County ships about 1,000 cars of potatoes a season which is approximately half of its crop. There are only two counties in the state, Suffolk and Steuben, whose potato shipments greatly exceed Ontario's. More potatoes are shipped from Naples than any other station in Ontario County, about 200 cars per year. Naples is located in the hilly region in the southern part of Ontario County near the Steuben County line.

Potatoes are also grown in the northern part of the county. About 150 cars per season are shipped from Victor. Potato yields are especially good on the lighter types of Dunkirk and Ontario soils. Although the soils are more productive in the northern part, blight is usually more severe than it is in the cooler hill region. Beans, cabbage, and corn are the common cultivated crops in the northern section which compete with potatoes. On farms having large orchards these crops are preferable to potatoes. The harvesting of potatoes and apples, which is the heaviest part of the work on both crops, comes at the same time.

Dairy cows are generally kept in those regions where large areas of land are either too wet, stoney, or rough to cultivate. Sufficient crop land is needed to raise the roughage for winter use. In many of the valleys in this state intensive dairying is practiced. The valley soils grow the roughage and the hillsides furnish the pasture.

In general, little of the land in the region need be used for pasture. There are about as few cows in the western part of the region as anywhere in the state. Some large dairies are kept near the cities and towns where the milk is sold locally for a good price.

Syracuse is the railroad center for several intensive dairy regions. The earliest importations of Holsteins were made by farmers near Syracuse. For years this has been the most important Holstein market. There are more cows in Onondaga, Cayuga and Tompkins counties than in the adjoining counties to the west. Dairying or hay and grain farming go well with poultry.

There are a number of large specialized poultry farms in the region. Over 10,000 cases of eggs were shipped from Odessa two years ago. Some of the oldest established strains of White Leghorns were developed near Cayuga Lake.

The rise and fall of a four million dollar wine trade and the development of vineyards in Central New York forms one of the most interesting chapters in the agricultural development of the area. For Concord grapes, as well as other varieties, are nowhere in the world grown with more satisfactory results than in this district, particularly about Canandaigua, Keuka and Seneca Lakes. Today approximately 12,000 acres of grapes are under cultivation by 1,160 growers whose crop averages a yield of $800,000 a year. The grape counties are Schuyler, Yates, Seneca, Steuben and Ontario.

To date the grape acreage in the district has decreased five per cent since prohibition. To improve the prospects of vineyardists the Finger Lakes Grape Marketing Committee was organized May 3, 1929, at Penn Yan and since has stimulated the popularity of the luscious product of vineyards of the district. At present the revenue to grape growers is a little less than before prohibition but it is much less than it was directly after passage of the Eighteenth Amendment. There were a few years from 1919 to 1927 when grapes sold for as high as $125 a ton and from $80 to $100 was very common. In 1931 the average price was thirty dollars a ton, under cost of production.

This marketing committee drafted a definite program. It provided that all vineyards producing one ton of grapes per acre or less be removed in favor of some other crop. It also set up a price reporting system in the district and assessed growers twenty cents per acre for advertising grapes. The program did not

actually get underway until 1931. It found its climax in a great grape festival at Hammondsport in October, 1932, when in pageantry, band concerts, sports, the crowing of a Queen of Grapes and other spectacular events, the growers focused the attention of the East on Finger Lakes grapes.

The grape men, since organization, had their first large exhibit of grapes at the State Fair in Syracuse in 1931, the display containing two tons of grapes, as well as grape juices, jellies, jams and sauces. Much of the success of the efforts were due to the efforts of L. O. Bond of Watkins Glen, secretary of the committee and agent of the Schuyler County Farm Bureau.

A period of about sixty years witnessed the rise and fall of the American wine and champagne industry, which at its height more than three decades ago, gave rich promise of eclipsing European production. Domestic wines were then produced, which in the opinion of connoisseurs were close rivals, if not excelling the vintage of France, Spain and Italy, which for centuries have enjoyed enviable reputation as wine makers.

This domestic production included not only the still wines but premier champagne, brandies and cordials. The grape belt of Lakes Keuka, Canandaigua and Seneca was particularly prominent in the domestic wine industry, vieing with the grape belts along the southern shores of Lake Erie, with the vineyards of southern Ohio and the extensive California grape country. While the wine output from California, Lake Erie and other points was large in quantity, it was generally conceded that the wine failed to qualify with the production of the Lake Keuka wineries.

This was due to the fact that grapes of this region are possessed of an unusual flavor, imparting to the vintages a delicate flavor. No other place in America witnessed such successful transplanting of European wine production as did the Lake Keuka belt. This section has proven itself the natural home of the grape, where it has developed to perfection.

The vineyards form a series of terraces rising 400 feet above the surface of the lake, almost precipitously in places and they receive from sunrise until sunset the warmth of the sun. It is an unaccountable peculiarity of the location that the grape does

not ripen to perfection at an altitude of over 400 feet above the lake. Ordinarily early frosts do not appear below this line, due largely to the tempering influence of the water.

When champagne making in America was at its height it was estimated that of the 4,600,000 bottles produced annually in this country, seventy-five per cent was made in the Lake Keuka wineries, and remaining twenty-five per cent produced in other parts of the country was made from grapes grown in the Lake Keuka area. Touching upon the history of the development of the wine industry in the region, it was Rev. William Bostwick who advanced grape culture in Central New York. Mr. Bostwick was for a term of years rector of St. Thomas Episcopal Church in Bath and also organized St. James Church in Hammondsport. He obtained a few cuttings from Isabella and Catawba vines in the Hudson River country. These he brought to Hammondsport and caused them to be planted in the grounds of the rectory. From that early beginning, in the year 1829, the culture of grapes spread locally, until in the heyday of the industry, some twenty-five years ago, the Lake Keuka vineyardists numbered several thousand persons; the annual output of grapes from the Lake Keuka vineyards alone totaled over 35,000 tons, besides the crop as grown along Seneca, Canandaigua and other lakes of this part of the state. Grapes were not regarded as possessed of commercial value in the Keuka fruit belt, until about the year 1850. At that time, the late William Hastings, a pioneer business man of Hammondsport, having developed grape cuttings as obtained from the vines of Mr. Bostwick, shipped a small consignment of the fruit to New York City, where it commanded ready sale. Six years later the enterprise had enlisted some hundred property owners and some 250 acres in Hammondsport and vicinity were devoted to vineyards.

The first large shipment of grapes was made in 1856 by the late J. W. Prentiss of the Town of Pulteney. He shipped over two tons of the fruit to New York, where it sold at a price netting him sixteen cents per pound. Immediately a new interest was awakened, resulting in an intensive effort towards development of the fruit, with a corresponding annual increase in the acreage

devoted to the crop, and with more property owners entering into the enterprise. Residents along Seneca and Canandaigua Lakes, observant of the rich profits which were then secured by the Lake Keuka grape growers, and with the added realization that they, too, were possessed of the same natural advantages of soil and climate as offered by the Lake Keuka grape culture, with the result that by the year 1862 the vineyards surrounding and in the vicinity of these three lakes totalled over 3,000 acres.

The rapid increase in grape production soon extended the demand for the fruit, which up until that time had been confined solely to table use. With grapes produced by the ton, whereas but a few years before they were practically a negligible quantity, the problem presented itself of a disposition of the crop, if prices were to be maintained.

It was at about that time that the wine industry in the Lake Keuka section witnessed its inception. A number of Hammondsport men, prominent among whom was the late Charles D. Champlin, organized the Pleasant Valley Wine Company, the nestor of wine making in Central New York. In the year 1860 the company built a modest plant upon the site of the company's present extensive cellars at Rheims, about a mile and a half south of the village of Hammondsport. While the company at first essayed the production of still wines only, it soon engaged in champagne manufacture in which it became world famous. Mr. Champlin remained a guiding factor in the concern until his death, and his children succeeded to his interests. The Pleasant Valley Company struggled through the period of the War of the Rebellion and then began an era of progress.

The organization of the Urbana Wine Company followed that of the Pleasant Valley Company, or in the year 1865. This company which owns an extensive plant with over fifty acres of well developed vineyard, about four miles north of Hammondsport on the west side of Lake Keuka, was also organized by Hammondsport men, prominent among whom was the late John Davis, who was for many years superintendent of the business; Mr. Davis' death occurred in 1903, when he was succeeded by James Neel, and upon the death of Mr. Neel, John Davis, a

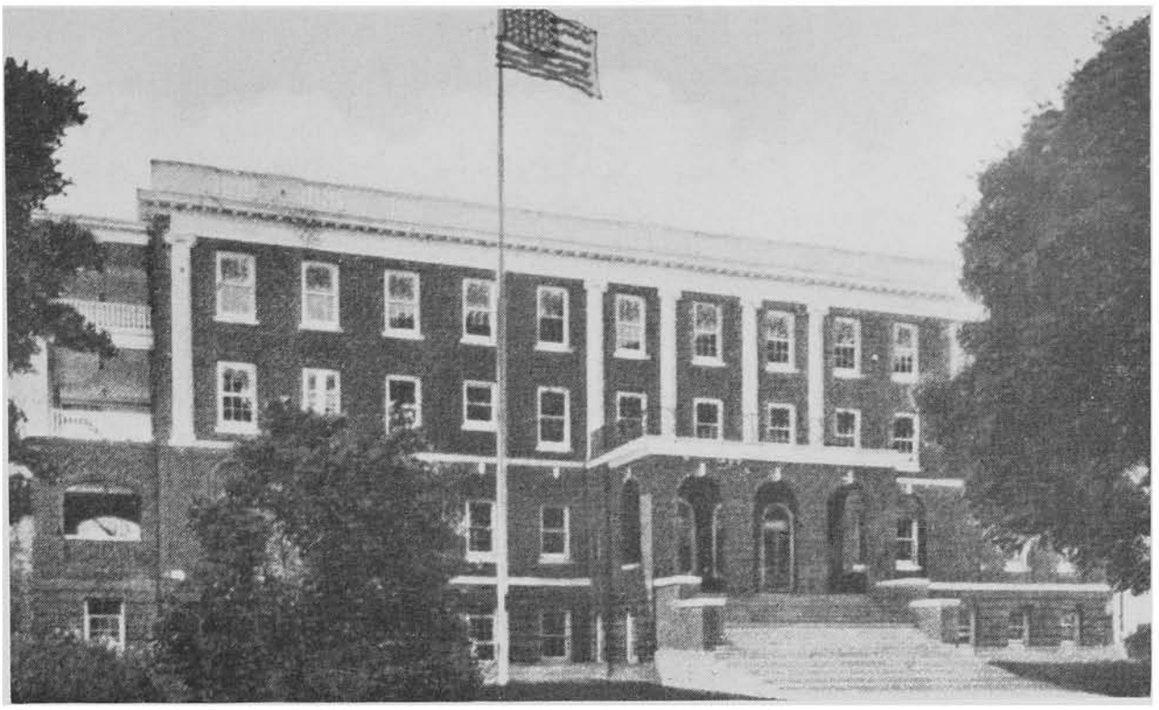
nephew of the original superintendent, succeeded to the position. Mr. Davis is both superintendent and treasurer of the Urbana Company.

Others prominent in the development of the Urbana's wine and champagne interests were the late Colonel A. J. Switzer of Bath, an early superintendent and later secretary of the company, and the late D. M. Hildredth of New York City.

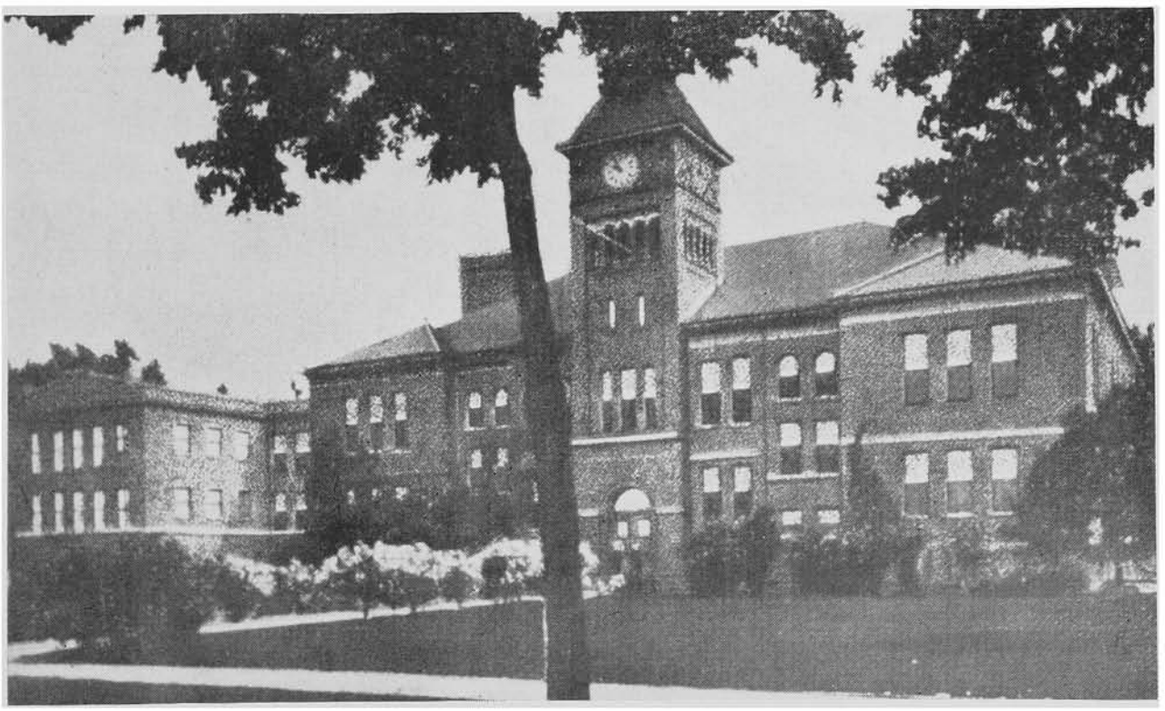
The construction of the Germania Wine Cellars in Pleasant Valley, near Hammondsport, followed within a few years. Its builders and owners were Gottlieb and the late John Frey, of Hammonsport. The Germania cellars entered into production of champagne, as well as still wines.

The Hammondsport Wine Cellars, another champagne producer, were built in the year 1880. The Empire State Wine Company and the Hammondsport Vintage Company within a few years built extensive champagne plants in the village of Penn Yan. The White Top Champagne Company built a modern plant at Gibson's Landing, on the west side of the lake, about twelve miles north of Hammondsport. The Glenn Wine Cellar, later known as the Roualet Cellars, was reconstructed from an old stone mill standing at the mouth of a picturesque Hammondsport Glen, in the village of that name.

In addition to the aforementioned cellars which specialized in champagne production, the community developed numerous extensive wineries which produced only still wines and brandies. In this number were the Columbia Cellars in Pleasant Valley, near Hammondsport, for many years owned and operated by Seymour Hubbs; the Seeley Wine Company in Bath, established by the late Henry Seeley; the Freidell Winery at Hammondsport, owned by J. C. Freidell; the Foster Cellars in the town of Pulteney, built and for a term of years conducted by the late Jeptha Foster; the Cushing Wine Company at Hammondsport, conducted by the late John Cushing, the McCorn Wine Company, in Hammondsport, owned and operated by LeRoy McCorn; the Crescent Wine Company, conducted by the late Ray Hall; the Monarch Cellars at Pleasant Valley, conducted by J. Hoyt Younglove; the Argus Cellars in the town of Pulteney, conducted by the late



SOLDIERS' AND SAILORS' MEMORIAL HOSPITAL, PENN YAN, N. Y.



HIGH SCHOOL, WATKINS, N. Y.

John Argus; the McCormick Wine Company, conducted by McCormick & Longwell, in Bath; Rose & Holmes Cellars at Hammondsport; the Lake Keuka Vintage Company, which had extensive vineyards and operated large cellars at Bath, under management of its owner, Robert Jones. Besides these local wineries, a large cellar was built at Severn-on-Seneca, and the Windner and Maxfield Cellars, both extensive plants, were built at Naples.

While the commercial development of the local wine industry devolved upon local men, the development of the wines of this district to their admitted point of superiority, ranking with the premier products of European wine centers, is confined to a small circle of men, most of whom were natives of the champagne districts of France, and who brought with them a fund of experience as gained in the old world. Jules Masson came to the Pleasant Valley Wine Company in the days of the company's early activities. He had served as a wine maker in France, of which country he was a native. He remained with the company for a long term of years, or until his death, and his sons, Victor and L. J. Masson, succeeded to his interests in the business to the development of which he so materially contributed. Charles Britton, another Frenchman, was likewise identified with the Lake Keuka wineries for a term of years, being an expert champagne maker. The late Jules Crance was champagne maker for the Urbana Company for many years, and to him is largely due the development of the company's premier products. Upon his death, he was succeeded by his son, Eugene. Albert Bricout, a native of France, was for some years active in several of the champagne cellars in and about Hammondsport. Both of the Frey brothers, John and Gottlieb, were expert champagne makers, and gave personal supervision to the output of the Germania Cellars. Charles Wheeler personally directed the production of the champagne at the White Top Cellars. H. G. Layton, of Hammondsport, was champagne maker for a term of years at the Hammondsport Cellars and was later employed by other local wine companies; Henri Roualet, who likewise came from France, was active in the development of the Roualet Cellars which produced the Roualet champagne.

With approximately 200 active granges in the area and with more High State Grange officers than any other district in the state, Central New York today is recognized as one of the best agriculturally organized sections of the East. From the time of the early pioneers, the agricultural nature of the area was exemplified in the formation of agricultural societies. These were the forerunners of the county fairs, they came before labor organizations themselves were effective and they were the agencies which first brought cooperation in farming and marketing.

Granges of today are the modern descendants of these old agricultural societies. The first grange in the area was Highland Grange, twenty-second formed in the state, in Schuyler County. It was organized November 4, 1873. The first granges formed in the other counties are:

Clyde Grange No. 33, Wayne County, January 8, 1874; Junius Grange No. 34, Seneca County, January 8, 1874; North Barton Grange No. 45, Tioga County, January 2, 1874; Chemung Valley, Chemung County, No. 57, January 21, 1874; Academy Grange No. 62, Ontario County, January 18, 1874; Prattsburg Grange No. 112, Steuben County, February 23, 1874; Caroline Grange No. 239, Tompkins County, September 29, 1874; Harmony Grange No. 372, Cortland County, January 18, 1876; Locke Grange No. 868, Cayuga County, February 2, 1899; Barrington Grange No. 1101, Yates County, March 1, 1907.

The number of granges in the various counties in 1932 were: Cayuga, twenty-one; Chemung, seven; Cortland, nineteen; Ontario, twenty-one; Schuyler, fourteen; Seneca, thirteen; Steuben, forty-four; Tioga, eleven; Tompkins, eighteen; Wayne, twenty; Yates, six; total, 194.

The master of the State Grange is Fred J. Freestone, Interlaken, Seneca County; the secretary is Frank J. Riley, Sennett, Cayuga County; the assistant steward, Dana P. Waldron, Wolcott, Wayne County, and Pomona, Mrs. Ida Potter, Hammondsport, Steuben County.

The death of Past State Master Silas L. Strivings at Castile, Wyoming County, a short time ago, leaves but one surviving past master, Sherman J. Lowell of Fredonia, Chautauqua County.

State leader from 1916 to 1920, Lowell also served as master of the National Grange in 1919-20. He holds the further distinction of being a past master of Fredonia Grange No. 1, the first regularly organized dues-paying grange in the world. It was established by the founder of the Order of Patrons of Husbandry, Oliver Hudson Kelley, April 16, 1868. President Coolidge appointed Mr. Lowell a member of the Federal Tariff Commission.

Of the many distinguished grange leaders furnished by the Empire State, aside from Lowell, Chautauqua County has given three state masters. When the state grange movement was launched at Syracuse November 6, 1873, George D. Hinckley of Chautauqua County was chosen to pilot the grange craft through the stormy waters of the early days. Besides Hinckley and Lowell, Chautauqua County gave the grange Walter C. Gifford, who served from 1890 to 1894. No other county has had so many state masters.

One of the men whose influence was strongly felt within the grange was William A. Armstrong of Elmira, secretary from 1874 to 1880 and master from 1880 to 1890. One of the founders, he was actively connected with the grange until his death in August, 1890. He also edited and published *The Husbandman*, official organ of the grange, from 1874 until his death.

Francis McDowell, one of the seven founders of the Order, came to State and National Grange prominence from Steuben County. Generous in financial aid, McDowell was treasurer of the National Grange from 1873 to 1893.

Three state grange masters have died in office, George P. Cushman of Seneca County, George A. Fuller of Jefferson and William N. Giles, who was secretary twenty years and died a year after being elevated to master.

Ellis B. Norris of Wayne, master for eight years, was one of the founders of the Farmers & Traders Life Insurance Company, organized by members of the Order and sponsored semi-officially by the State Grange. Frank N. Godfrey, who succeeded Master Fuller, was a leading advocate of cooperative trading. Willett H. Vary of Jefferson was one of the best par-

liamentarians the State Grange has ever known. He succeeded Godfrey as master. He favored cooperative fire insurance.

Albert Manning, who filled out Master Giles' unexpired term, will be remembered as one of the founders of the Dairymen's League, and was its first secretary.

Henry H. Goff of Monroe County, secretary of the grange for twenty years, is sometimes called the "Father of Farm Cooperatives" in this state. He was instrumental in organizing the Grange League Federation, one of the largest farm cooperatives in America.

The present master, Fred J. Freestone of Interlaken, Seneca County, was elevated to the mastership in 1928, after serving as lecturer and overseer. It was largely through his initiative and enthusiasm that at the annual meeting of the National Grange in Rochester in November, 1930, New York had 11,125 seventh degree candidates on the platform, the largest class in the history of the National organization. Governor Roosevelt has honored Freestone by appointing him a member of the State Waterpower Commission.

As a step in making farm boys and girls into better farmers and farmers' wives, the 4-H Club, or junior project movement, has been one of the latest and most effective agricultural programs launched in Central New York. Figures available at the close of 1931 indicated that there are 326 clubs in the eleven counties of the area, with 2,182 boys and 2,005 girls on their roster. In gardening, farming, dairying, poultry raising and other farm activities the boys have made rapid progress. In homemaking and its varied management problems the girls in the various clubs have likewise learned fundamentals that will add to efficiency in the farm home. Both girls and boys have won prizes at both state and county fairs and the interest in their organized farm study program is rapidly increasing. Most of the junior extension work in the region is financed largely through appropriations by the Boards of Supervisors.

Chemung County was the first in the region to undertake 4-H Club work. It was established there July 1, 1919, by Rufus Stanley, agent until July 8, 1926. Chemung has sixty-one individual

4-H Clubs with 284 boys and 241 girls enrolled. Those who have piloted the work there were: Irene Dunn, acting agent from July 19, 1926, to August 17, 1926; C. N. Chamberlain, acting agent from August 18, 1926, to September 20, 1926; F. C. Essick, agent from January 1, 1927, to January 31, 1929, and the present agent, E. C. Grant, who began work February 18, 1929.

In Cayuga County the work was established May 1, 1929. As 1932 opened, there were forty-one clubs in the county, with 245 boys and 258 girls on the roster. Agents included P. W. Thayer, July 23, 1928, to September 24, 1928; S. B. Dorrance, May 1, 1929, to October 15, 1931; F. R. Sears, appointed October 16, 1931, and still serving.

March, 1928, marked the beginning of 4-H Club work in Cortland County, where forty-one clubs have an enrollment of 337 boys and 270 girls. C. C. Henderson, appointed March 26, 1928, and Elizabeth Woolley, named February 7, 1929, still hold office as agents.

The thirty-two clubs in Tompkins County, where the work began in April, 1922, have 301 boys and 272 girls as members. The agents of that county have included: O. C. Potter, April 4, 1922, to January 31, 1923; W. G. Meal, February 1, 1923, to August 15, 1925; E. W. Hoffman, August 16, 1925, to date. Tompkins acting agents have been P. W. Thayer, January 11, 1929, to June 15, 1929; W. J. Merton, October 1, 1930, to February 15, 1931; R. L. Higley, March 24, 1931, to replace Agent Hoffman on a leave of absence in 1932 because of illness.

In Tioga County there is no club agent, but a few scattering enrollments have been under the direction of the county agricultural agent and teachers of agriculture. The two clubs in the county number seventeen boys and twenty-eight girls.

Likewise in Seneca County there is no agent, the work being handled by the county agricultural agent. The five clubs here have sixty-nine boys enrolled.

The assistant agricultural agent in Wayne County directs 4-H work there, where forty-two clubs include 280 boys and 240 girls.

There is but one club of thirteen boys and four girls in Steuben County, where the activity is in charge of the agricultural agent.

The single club of eleven boys and ten girls in Yates County has similar direction there.

Ontario County vies with Chemung in being a pioneer in 4-H endeavor in the region. The work was established in Ontario in May, 1919, and today there are fifty clubs with 367 boys and 429 girls, setting a membership record for the region. From 1919 until 1923 the work was discontinued in Ontario County. Agents have been: H. I. Barber, May 1, 1919, to August 5, 1919; A. H. Saunders, August 10, 1919, to October 15, 1919; Clarence Johnson, February 15, 1923, to March 15, 1928; A. B. Woodard, March 16, 1928, to the present year.

Schuyler County, one of the region's smallest, has one of the largest organizations, embracing fifty clubs with 258 boys and 253 girls. Here the work was established in January, 1926. The agents: Ira LeFever, May 15, 1924, to September 30, 1924, temporary; Ira LeFever, April 1, 1925, to September 30, 1925; R. O. Bale, January 1, 1926, to the present.

CHAPTER XIX

INVENTION AND SCIENTISTS.

RADIO—TELEGRAPH—PROFESSORS ANTHONY AND MOHLER—GEORGE M. PULLMAN—THE IRON PLOW—THE MOVIETONE—SUNDAE—BLOOMERS—ADDING MACHINE—TILE DRAIN—REVOLVING TURRET—DR. WILLIAM BROOKS— JOHN ALDEN LORING—FLOYD KARKER RICHTMYER—WALTER FRANCIS WILCOX—DR. EUGENE C. SULLIVAN—DR. HENRY PHELPS GAGE.

In the past eleven years, where once the voice of the red man ranged no farther than the light of his campfire, radio has brought the voice of the world to Central New York. Out of the vastness of the air one night in 1920 there came the strains of music and the clear word of a human voice. It was Dr. Frank Conrad of Westinghouse conducting experiments in radio telephony between his laboratory and his home in Pittsburgh. Those experiments led to the operation there of the first broadcasting station on November 2, 1920.

But before that first broadcasting station, radio amateurs in Central New York, who had built radio receiving sets after the government removed its war-time restrictions, were receiving, in the dot dash code, messages from the ether. With the broadcasting station came quick development of radio, until today, little more than a decade after the first station opened, there are as many radio receiving sets in Central New York as there are telephones. And the region itself has broadcasting stations of its own. No longer is there the age-old solitude of evenings on isolated farms. To navigation, to communications, to aviation and other occupations radio has bestowed its bounty. And almost hourly it is touching the lives of Central New York residents with the grace and sweetness of music.

The World War opened to amateurs in Central New York the intriguing possibilities of radio. They were operating their

little sets before the first broadcasting station existed. One of the pioneers was Charles Heiser of Auburn who, in the summer of 1927 from his station HEME, was the chief transmission point in sending and receiving for the New York Times the radio news from the schooner Morrissey in Baffin Land, north of Nova Scotia, where the Putnam Expedition went on exploration. George Palmer Putnam of New York was in charge and the ship was captained by Robert A. Bartlett, who commanded the "Roosevelt" for Admiral Peary during expeditions leading to discovery of the North Pole in 1909. Later Heiser and other amateurs of the area were in constant touch with Admiral Richard Byrd at the South Pole.

Even before this the amateurs were doing their best to advertise Central New York. Dozens of them sent greetings broadcast to hundreds of native sons of the district then in distant places, signing the messages for the Finger Lakes Association, a civic organization of Chambers of Commerce. As early as May, 1925, these messages were circling the globe. One of the first responses from Europe came from H. Y. Yesse, Jr., of Leiden, Holland, where a station of the Noordwyksche Radio Club picked up the greeting on a seventy-six meter wave length.

In January, 1928, at Heisers's invitation, a group of ten amateurs met in Auburn and formed the Finger Lake Transmitting Society, which has broadened out until today it covers Central New York. The society at once affiliated with the American Radio Relay League and chose the slogan, "The Finger Lakes Call You," to be broadcast to every land. In the summer of 1929 the society was host to the Atlantic Division convention of the American league in Auburn. Meetings of the society are featured by technical talks and an exchange of ideas for advancement of radio transmission. Most of the towns in Central New York are now represented in the organization.

Before any broadcasting stations, for regular programs were established in the region, Central New York was being advertised over the air from the larger cities. One of the first of these broadcasts, arranged by the Finger Lakes Association, went out of Station WFBL, Syracuse, on March 21, 1925, when between

10 and 12 p. m. a "native son" program was put on the air. The offerings were entirely by Central New York talent. But before that time other Central New York advertising, through arrangements by the Finger Lakes Association, had gone over the ether. George Cooley on Thanksgiving, 1924, gave a half hour's talk on the region from WEAF, then the most powerful station in New York City. A similar talk went out shortly afterward from Station WJAX, Cleveland, Ohio, through the association's cooperation with the Cleveland Automobile Club and from that time on radio broadcasts from stations throughout America have helped to advertise the heart of the Empire State.

Auburn, birthplace of the society of amateur operators, was the first and only city to date in the eleven Central New York counties to have its own police radio broadcasting station, the sending station being tuned in with receiving sets in the department's "prowl cars." Auburn was the thirteenth city in the United States to apply for a federal police broadcasting permit. The apparatus was installed in the new police station opened in December, 1931, and began operation early in 1932, the entire cost being a little less than $10,000. When the radio engineer, Charles Heiser, resigned April 1, 1932, to become an electrical engineer at Auburn Prison, City Manager William B. Patterson eliminated the office and junked the radio equipment with the explanation: "We do not care for it and we do not need it."

In the early days of broadcasting music and talks, portable sending stations were licensed to go on tour and many a Central New York theater was filled with the curious drawn to see a broadcast program from the stage. These low power stations drew large numbers of singers and musicians who desired to try their hand before the microphone. When in Watkins Glen, one of these stations broadcast a talk on Central New York by William M. Leffingwell, then president of the Finger Lakes Association.

Central New York today has three broadcasting stations. Station WMBO in Auburn, opened by George I. Stevens of Union

Springs, was licensed in January, 1927, for 100 watts and 1310 kilocycles. In June, 1931, the station was sold to Fred L. Keesee of Buffalo and was operated under the name WMBO, Inc. The full 100 watt power was not used until the transfer, when improvements in equipment were made. The station is a commercial one and operates both day and evenings, with remote control equipment linking it with several churches, halls, dining rooms or clubs.

Station WEAI, owned and operated by Cornell University, Ithaca, had one of the first radio licenses issued, but did not begin broadcasting regularly until August 16, 1929. It is not listed in the Radio Standard Rate and Data Book, because it does not do commercial work. It operates in daylight hours each day except Sundays and provides educational programs chiefly, stressing scientific agriculture.

The only other station is WLCI, a small station operated by the Lutheran Church of Ithaca, being on the air only during church services Sundays, with an occasional evening or afternoon service.

TELEGRAPH.

The railroad era in Central New York gave place to the age of wire. Before many settlers had ever ridden on a train, the frontiers began to hear of the strange telegraph of Samuel F. B. Morse. The first telegraph message was transmitted May 27, 1844, between Washington and Baltimore and soon thereafter it invaded the heart of New York. Extension of the lines gave new impetus to journalism, bringing the daily to augment the weekly. The first telegraph line to Auburn came in 1846 and four years later the first telegraph office opened in Elmira over a drug store. Its wire ran to Canandaigua to connect with the New York Central railroad wires.

Next to the inventor of the telegraph, none did more to make it practical than two men from Central New York. It was Millard Fillmore, thirteenth president and a native of Cayuga County, who as a member of Congress in 1842 procured for Inventor Morse a government appropriation for the completion of

an experimental line. Morse's idea was to bury wires. The man who suggested stringing them on poles was Ezra Cornell of Ithaca, founder of Cornell University. Mr. Cornell made a fortune out of the idea and hastened the day when coast speaks to coast without delay.

In the realm of police communication, the greatest advance in a generation was noted on August 13, 1931, when nine cities and villages of Central New York installed teletype machines, operated in a system throughout the state. In the police stations of each of these communities is a receiving and sending machine, resembling a typewriter, which through electrical impulses made by the keys, receives or transmits to typewritten sheets automatically the message. In this way police warnings, queries, requests, descriptions of crimes, fugitives, stolen cars, etc., is instantaneously sent over a state system.

Central New York communities which installed the teletypes are Ithaca, Elmira, Corning, Cortland, Auburn, Waterloo, Canandaigua, Newark, and Hornell. Ithaca abandoned her connection a few months after installation.

PROFESSORS ANTHONY AND MOLER.

Electrical engineering found birth at Ithaca, Tompkins County, when Profs. William A. Anthony and George S. Moler of Cornell University built the first electric dynamo constructed on this continent in 1875. The dynamo supplied current for the first outdoor electric lights in America—two arc lights on the university campus. The power was transmitted to the arc lights by underground cable, the first time in American history that such a procedure was accomplished. At the Centennial Exposition more than a half century ago, the first dynamo constructed at the Cornell shops was exhibited and received nation-wide recognition. The dynamo was driven by an engine designed by Prof. John E. Sweet of the Cornell engineering staff. At the World's Fairs at Chicago in 1893 and at St. Louis in 1904 the dynamo attracted interested attention.

With this initial development at Cornell, birth was also given to the teaching of electrical engineering for the first time in any

American college. Eight years after, in 1883, the Cornell trustees authorized establishment of an electrical engineering degree resulting from studies in the department thus formed.

Moler, professor emeritus of physics at Cornell, was also responsible for numerous other inventions, but never commercialized them. He was credited with having taken the first X-ray photographs after news of the discovery of the X-ray was cabled from abroad. Prof. Moler was born in Columbus, Ohio, and received arts and engineering degrees from Hedding College and Cornell. He was honored by several governments. Scientists gathered in Ithaca in October, 1931, to honor him on the 100th anniversary of Farad's discovery of the dynamo and also on the sixtieth anniversary of engineering at Cornell. Moler died May 30, 1932, at the home of a daughter in Trenton, New Jersey. His collaborator, Prof. Anthony, died several years before.

TELEPHONE.

Ithaca boasts one of the earliest telephone lines. Two years after Dr. Alexander Graham Bell had constructed the first line in 1876, the village had a line running to the college campus. Early telephones sounded their calls at all terminals on the line. Selective ringing was first used in Ithaca.

GEORGE M. PULLMAN.

The Pullman sleeping car had its conception in the mind of a man born in Auburn, Cayuga County. George M. Pullman was born in Owasco Street, Auburn, but when a little boy, the Pullman family removed to Westfield, New York, where the son grew to maturity. He was in his sixties before he began making the famous sleeping car in a small way and later established Pullman, Illinois, the home of the industry. Pullman's mother in later years visited Auburn, making the trip in the first Pullman car manufactured.

JOHN JETHROW WOOD, INVENTOR OF IRON PLOW.

In 1814, John Jethrow Wood, a well to do farmer living in Moravia, Cayuga County, invented the world's first cast iron

plow, replacing those of wood. The first was defective and in 1819 he patented another, the perfect one, and he received the congratulations of Thomas Jefferson. Wood sent one of the plows to Alexander I, Emperor of Russia, before the days of the steamship and the telegraph. As French was then the diplomatic language the inventor asked his friend, Dr. Samuel Mitchell, president of the State Society of Natural History and Sciences, to write a letter in that tongue to accompany the gift. The Czar of all the Russians sent back a ring valued at from $7,000 to $15,000 to the inventor. But the letter writer got the royal gift. Wood appealed to the Russian minister in Washington, but Wood never received the ring.

Manufacturers stole Wood's patents and in 1834 discouraged with trying to gain reward for his invention, he died, pecuniarily ruined. His son Benjamin received the patent as a legacy and fought on for the patent protection. Clay, Webster, and John Quincy Adams all aided the son, as did William H. Seward, but it was 1845 before the courts finally declared Wood sole owner of the patent rights. The son of the inventor died within a year and it was found that less than $550 was all that the invention ever netted the Woods, who had spent much more upon the improvement than the sum received.

THE MOVIETONE.

Perfection of the Movietone, or talking movie, is largely due to the inventions made by Theodore W. Case, millionaire inventor of Auburn and president of the Case Research Laboratory, Inc. During the World War Mr. Case researched for the United States Navy in a civilian capacity at the Naval Experiment Station, New London, Connecticut, and perfected a system for invisible light signaling and telephony. This and previous work led to development of the Movietone a few years later.

Out of this work Case created the Thalofide Cell, a new photo-electric substance. With this as a basis, the talking movie of perfected type was possible, and Mr. Case became a member of the Fox-Case Corporation, which produced the Movietone, later

taken over entirely by Fox. Mr. Case is author of numerous scientific works and has lectured before scientific bodies on two continents.

THE SUNDAE.

The birth of the sundae, an event which stirred the soda fountain industry from coast to coast, is credited with having taken place on a warm summer morning in 1891 in the back of the drug store which of late years has been the Christiance-Dudley Pharmacy in Ithaca. A certain local preacher was fond of a dish of ice cream on warm summer Sunday mornings. Stores were closed but on invitation of C. C. Platt, then owner of the drug store, the clergyman was wont to repair to the rear of the pharmacy and quietly have his ice cream. One Sunday, the pastor asked to have cherry soda syrup on his cream. Two college boys present saw the unique dish. The idea made an instant hit. And in deference to the day, the minister suggested that ice cream with flavoring syrup be called Sunday. "Sundaes" then went wherever Cornell students went. They arrived as a recognized soda fountain delicacy.

BLOOMERS.

On July 23, 1851, Mrs. Amelia Bloomer of Seneca Falls, Seneca County, sallied forth upon an astonished world in a skirt as short as those worn by women today, and a pair of "trousers" extending to the ankles and drawn in by an elastic band. This new "invention" made its "official" appearance a little later. The bloomer bloomed first in the City of Lowell, Massachusetts, on the occasion of an evening party. Among those present was our heroine, Amelia of Seneca Falls, editor of The Lily, a temperance magazine and the designer of the costume already described. The garment has ever since borne her name.

The National Dress Reform Association was organized in 1855 and an old hotel at Glen Haven, Cortland County, on Skaneateles Lake, was its headquarters. Amelia, as a vice president, was instrumental in having this organization push the

bloomers hard. Since then the word had entered every dictionary. But much water has run under fashion's mill and the bloomer, then a revolutionary idea, is today not even reactionary. It is an antique.

THE ADDING MACHINE.

A lecture heard in school by a boy of twelve years fired the ambition of an Auburn bank clerk and led him on to a success that terminated in the invention of the adding machine and the founding of a company valued at $73,000,000. When William Seward Burroughs, in the winter of 1871-'72 decided he'd like to go to the old Genesee Street No. 2 school to hear a talk on "Mathematical Short Cuts," he little realized that he was to be fired with an idea that would revolutionize clerical office practice throughout the world.

The next day young Burroughs started experimenting. The results are more than 1,200,000 of his adding machines today are in use in every nation on the globe. William H. Seward, his boyhood inspiration, died the year after William came to Auburn in 1871. The boy left school after two years in High School. His first job was in the post office, then located at No. 7 Exchange Street. Then he went to the Cayuga County National Bank as discount clerk and broke down from overwork. After a long illness, he started making his adding machines and lost all he had. Undaunted, he removed to St. Louis, Missouri, in 1881, and spent twelve years in perfecting his machine. He organized his manufacturing company under the name of the American Arithmometer Company, a cognomen reflecting the impress of the old lecture on short turns in arithmetic. The world's first practical adding machine was on the market.

TILE DRAIN.

On the sloping shores of Seneca Lake, there is a farm of historical significance in the agricultural development of America. On this farm, of late years owned by Charles R. Mellon, the first tile drain in America was laid. In 1835 John Johnston, a Scotch-

man, imported a few tile drains from his native heath and placed them in the wet clay of the farm. By 1851 he had laid sixteen miles of tile drain on his own farm and within five years more had increased it to fifty-one miles. His wheat, the principal crop, increased from indifferent yields of fifteen and twenty bushels to more than forty bushels an acre.

THE REVOLVING TURRET.

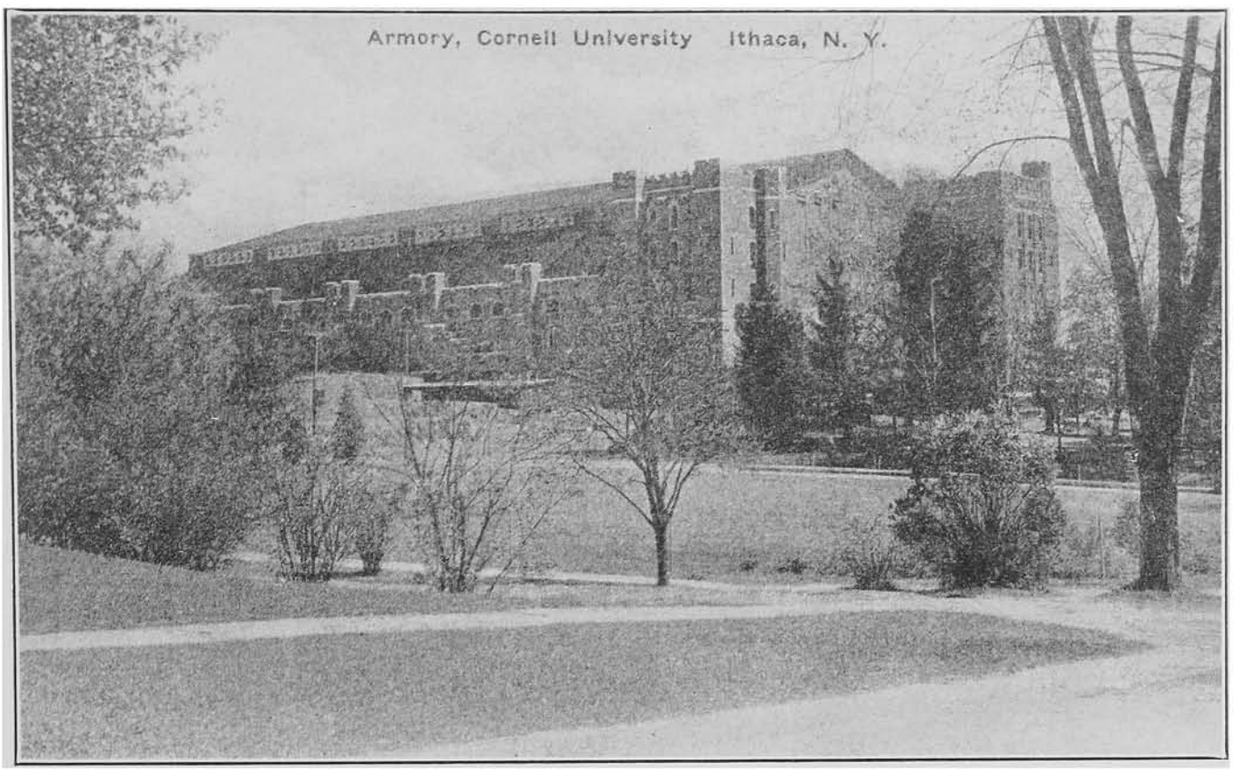
In Meridian, Cayuga County, the house is still standing where Theodore R. Timby, the inventor of the revolving turret, first used on the famous battleship, the Monitor, lived from about 1849 to 1860. The Monitor gained its fame in the engagement with the Merrimac in 1862 off Hampton Roads, an engagement which lasted for four hours. Though the Monitor was uninjured, the Merrimac, of the Confederates, gave up the contest, so disabled she had to be towed to port. As the first battle of iron clad warships, the encounter created much interest in all maritime nations, though nowhere except in the United States was the Monitor adopted as a distinct type of warship.

DR. WILLIAM R. BROOKS, ASTRONOMER.

In Geneva, Ontario County, resided Dr. William R. Brooks, whose laboratory was in the rear of his attractive home. Doctor Brooks at his death had established a record as a comet hunter in that he discovered twenty-seven comets, a record equaled by only one other astronomer. The most brilliant of the comets with which his name was connected and which were among the most brilliant ever recorded, were the Pons-Brooks comet of 1883 and the Olbers-Brooks comet of 1887.

JOHN ALDEN LORING, NATURALIST

Reporting on the migration and habits of birds and animals at Owego, Tioga County, John Alden Loring, internationally known naturalist, began working at his vocation at the age of thirteen, when he did voluntary work for the United States Biological Survey. Though born in 1871 in Cleveland, Ohio, the



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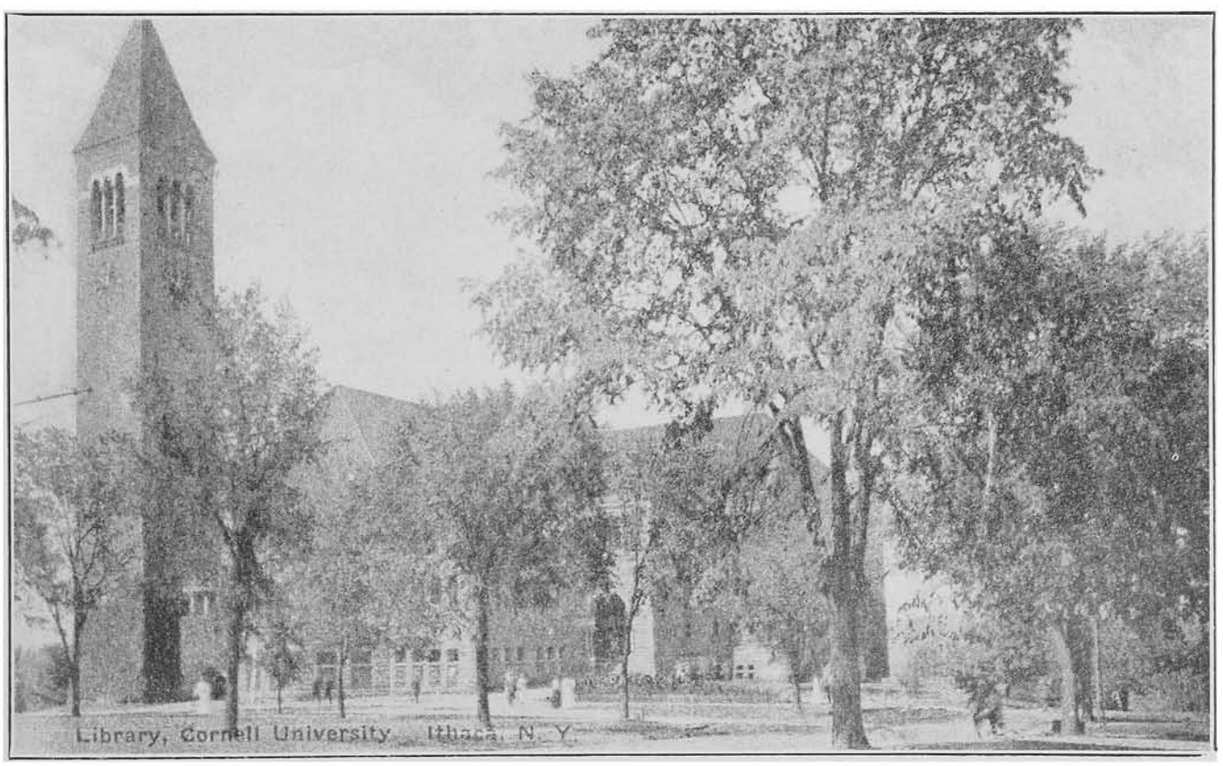

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family moved to Owego two years later. When he was eighteen years old, Loring applied to the United States Biological Survey for a position as field naturalist. Two years later he received a commission and spent seven years collecting specimens in this country, Mexico, Canada and Alaska.

He spent the year 1898 studying at the London Zoological Gardens and then was commissioned by the Smithsonian Institute to collect specimens of birds and mammals in continental Europe. He traveled through Sweden, Denmark, Germany, Belgium, Holland, France, Italy and Austria and in two months collected 913 specimens, at that time the largest collection ever brought to America after such a short search.

Soon after his return Loring accepted a position as curator of mammals at the New York Zoological Park. In that capacity he was sent to Alaska in 1903 to capture specimens of lambs of the white Alaskan mountain sheep, and Kadiak bear cubs. He captured four lambs in the mountains near Cook's Inlet, a feat never before accomplished, but they failed to survive.

In 1905 Loring was sent by the New York Zoological Society and the United States Department of Agriculture to the Wichita Mountains in Oklahoma to select a suitable tract for a preserve for breeding bison. In 1909 he accompanied Theodore Roosevelt on his hunting expedition to East Africa.

His experiences were related in numerous magazine articles and later were published in book form under the title "Through Africa with Roosevelt."

In 1916 he was commissioned to go to South Africa and purchase wild animals for New York, Philadelphia and Washington. He returned early in the following year with 200 birds and animals. He spent the summer of 1920 on Lake Athabasca, Canada, on behalf of the United States Biological Survey, studying the habits of waterfowl in their breeding grounds. Two years later Loring made a 1,300-mile trip down the Frazier and Peace Rivers to Lake Athabasca, also for the Survey.

DR. FLOYD KARKER RICHTMYER.

Dozens of experts at Cornell University are internationally known for their achievements in scientific fields. As a physicist,

Floyd Karker Richtmyer is recognized on two continents. Research and study of X-ray phenomena brought him in 1929 the Leavey Medal at Franklin Institute. In 1927 he spent a year in study and research at Gottingen, Germany, and Upsala, Sweden. In Gottingen he worked in the laboratory of Professor Siegbahm, the noted X-ray specialist, and there conducted investigations which led to his formulation of the laws of absorption of X-ray in matter.

Doctor Richtmyer developed protective screens of various metalic substances which are recognized as of great importance in the medical profession.

He was born at Cobleskill, New York, October 12, 1881, a son of Robert and Elmina Karker Richtmyer. In 1904 he received his A. B. degree from Cornell University and in 1910, the degree of Ph. D. From 1904 to 1906 he was instructor in physics at Drexel Institute, Philadelphia, after which he went to Cornell University where he became professor of physics in 1918, a position he still held in 1930 when he was elected dean of the graduate school, succeeding Dean Rollins A. Amerson.

Doctor Richtmyer was chairman of the division of physical sciences of the National Research Council at the time he became dean and had been identified with the council since its foundation ten years earlier. His textbook, "An Introduction to Modern Physics," was widely used by students studying the advanced phases of this science.

In the summer of 1915 he was physicist with the Bureau of Standards at Washington. In 1919-20, he was an investigator in the General Electric Research Laboratory. During the war Doctor Richtmyer was a radio engineer in the signal corps of the United States Army and in 1925 was appointed major of the ordinance reserve corps.

He was a member of the American Association for the Advancement of Science, the American Physical Society, the Optical Society of America, of which he was president in 1920, the American Association of University Professors, Sigma Xi, of which he was president in 1924-25, and of Gamma Alpha, graduate fraternity.

WALTER FRANCIS WILCOX.

Walter Francis Wilcox, a statistician, at Cornell University, was saluted in one national publication in 1932 as a "veteran statistician of the very first international rank." Since 1891 he was a member of the university faculty and became professor of economics and statistics in 1901. He is author of numerous statistical works.

He was chief statistician for the twelfth United States census, 1899-1902; statistics expert for the War Department in the census for Cuba and Porto Rico, 1899-1900; special agent United States Census Bureau since 1902; and consulting expert for the New York State Department of Health since 1907.

He represented the United States as delegate to these meetings of the International Statistical Institute, Berlin, 1903; London, 1905; Paris, 1909; Brussels, 1923; and Rome, 1925.

Other connections included: President of the American Statistical Association, 1911-12; American Economic Association, 1915; vice chairman of the executive committee and president of the section on Demography, International Congress on Hygiene and Demography at Washington in 1912; vice president of the International Statistical Institution since 1923; member of the American Council of Learned Societies of which was vice chairman since 1926; honorary member of the Royal Statistical Society of England, the Statistical Society of Hungary; an associate of the International Institute of Sociology (Paris).

DR. EUGENE C. SULLIVAN.

Official recognition as one of the leaders in the field of chemical research came to Dr. Eugene Cornelius Sullivan, chemist of Corning, Steuben County, when in 1928 he was awarded the Perkins Medal for research and, jointly with William C. Taylor, an associate, the Howard N. Potts Gold Medal for "invention of super-resistant glasses. In 1908 Doctor Sullivan resigned from the staff of the chemical laboratory of the United States Geological Survey to become chief chemist at the Corning Glass Works.

In 1920 he was made vice president and was in charge of manufacturing until 1928 when he was elected president.

Despite his business affiliations, Doctor Sullivan devoted a great deal of his time to research work, applying his attention particularly to the development of iodine compounds; the influence of one substance in solution on the solubility of another substance; reactions of minerals and water solution, and the relation between chemical composition and the physical properties of glass.

DR. HENRY PHELPS GAGE.

Scores of modern appliances in which glass is used bear testimony to the work of Dr. Henry Phelps Gage, another Corning man. Doctor Gage, staff scientist at the Corning Glass Works, has received renown in the scientific world for the development of scientific glass, particularly as regards its therapeutic value.

Born in Ithaca, October 4, 1886, the son of Simon Henry Gage, a biology professor at Cornell University, and Susanna Stewart Phelps, he obtained his early education in the public schools of that city. In 1908, he was graduated from Cornell University with the degree of Bachelor of Arts, and in 1911 obtained the degree of Doctor of Philosophy from the same college.

In the same year he was placed in charge of the optical laboratory at the Corning Glass Works and from that time made the development of glass his life work. He assisted in the development of special lenses for railway signals and signal apparatus, colored glass for scientific work, "Conophore" lenses for automobile headlights, a new type of condenser for motion picture projection, "Daylite" glass for color identification and reading lamps, and many other special forms of glass.

Doctor Gage took special interest in the development of ultraviolet glass and took an active part in the experiments conducted at Cornell University to determine the therapeutic value of ultraviolet rays in the treatment of common colds. He was widely known as a lecturer before scientific societies.

CHAPTER XX

NATURAL GAS AND SALT.

FIRST GAS WELL—OTHER PRODUCTIVE WELLS—DEVELOPMENT OF INDUSTRY—PRESENT PRODUCTON—CONSTRUCTION OF PIPE LINES—USE OF SEISMOGRAPHS—SALT.

Derricks sprouting skyward, truckloads of iron pipe moving over highways, grimy workmen with dinner pails, the steady throb of machinery, clouds of steam from pounding engines—that is the picture painted in the last two years in Steuben, Schuyler, Yates, and Chemung Counties as a result of a great natural gas boom, the latest development in Central New York.

Exploration and drilling in of new producing wells have been weekly occurrances, with the discovery of the Wayne-Dundee field where the first well was bottomed in the town of Tyrone, Schuyler County, in 1930. Discovery of the gas in the hills about the heads of the Finger Lakes has brought an extensive leasing campaign by capitalists who see new wealth from the soil of the district. In Schuyler County out of a total area of 215,040 acres, 139,215 are under lease by gas or oil interests; in Steuben County the leased acreage is 336,215 out of a total of 894,720; in Chemung County 116,772 out of 260,480. Other counties of the district also have much land under lease, Central New York having an estimated acreage of between three and four million seen as prospective gas or oil lands.

The new Wayne-Dundee field, which the past year made substantial deliveries of gas to pipe lines, lies a little east of Lake Keuka on a line between Penn Yan and Corning, about twenty miles north of the latter place. Its limits are included mainly within the town of Tyrone, Schuyler County, but they reach north for a short distance into Barrington, Yates County, and

west into the town of Wayne, Steuben County, including the site of Wayne village.

After the original discovery was made by the Belmont Quadrangle Drilling Company about March 1, 1930, leasing and drilling progressed rapidly and the entire field has now been fairly explored and its bounds have been determined with measureable detail. The productive area is approximately 6,000 acres or slightly under ten square miles. The discovery, or No. 1 well, was put down on the Pulver farm in the eastern part of the field known as the Dundee area. The well came in with an indicated flow of about 6,000,000 cubic feet a day. The rock pressure was 730 pounds. The gas bearing formation in which the well was bottomed at 2,075 feet (569 feet below sea level) was sandstone lying directly below heavy limestone beds, identified as Onondaga limestone.

A second well, one-half mile northeast, on the Litteer place, was completed two months later for an open flow of 10,000,000 cubic feet. No. 3 well, on the Losey farm, one-fourth mile southeast of No. 2, gave on a test flow of 6,000,000 cubic feet. Rapid drilling in this field with such success that within a year fourteen producing wells for an average initial flow of 6,000,000 cubic feet were completed. At present there are about thirty producing wells in the Dundee or sour gas area. The surface elevations in this part of the field range from 1,300 to 1,600 feet and the depth of the holes between 1,900 and 2,200 feet.

With the progress of exploration, the productive territory was extended west and northward into Wayne and Barrington townships. This is known as the Wayne area. Wells were put down two miles east of Wayne village by the Tyrone Oil and Gas Company. They were followed by the drilling of Biglow No. 1 in Wayne village area of Steuben County. This well, starting at an elevation of 1,207 feet, reached the Oriskany sand at a depth of 1,747 feet and tapped a flow of 10,000,000 feet of gas. With its completion in March, 1931, the progress of exploration in the Wayne area was rapid. Competitive drilling, particularly in Wayne village and environs, has brought overdevelopment,

according to State Geologist D. H. Newland and his assistant, C. A. Hartnagel.

The number of wells completed in the field December 31, 1931, was 111, of which total ninety-three were productive and eighteen dry. The open flow of the productive wells ranged from a minimum of a few hundred thousand to 12,000,000 cubic feet a day.

A feature of interest in connection with the Wayne-Dundee field is the presence of both "sweet" and "sour" gas, and the separation of the two into distinct areas. Sulphur free or "sweet" gas is confined to the Wayne area, whereas "sour" or sulphurous gas is met within the Dundee area.

One estimate of the yield in the district at a total of 16,990,000,000 cubic feet, on the basis of calculation by volumetric method. Of this total, 11,750,000,000 is assigned to the Dundee gas area and 5,240,000,000 to the Wayne division. A second estimate by Frank Brewster, president of the Belmont Quadrangle Drilling Company, the holder of the largest single interest in production, puts the original reserves by the pressure drop method at 17,282,529,000 cubic feet, of which the Wayne area had 4,413,485,000 cubic feet and the Dundee 12,869,044,000 cubic feet. As of October 19, 1931, an estimated total of 126,000,000 cubic feet had been removed from the Wayne area and 665,943,000 cubic feet from the Dundee area.

Outlet for the gas from the Wayne-Dundee field has been provided by the construction of pipe lines. The Iroquois Gas Corporation has recently completed an eight-inch line from the Wayne field to Livingston County, where it connects with the older line of the company leading to Buffalo. The Home Gas Company has laid a pipe line from the Dundee area to Horseheads, where connection is made with the trunk line extending into New Jersey. Gas from the Dundee area is delivered as far east as Binghamton. A local line supplies Dundee village. Another pipe line to the village of Bath is planned.

As this is written early in 1932, a twenty-inch pipe line is under construction by the Lycoming Gas Company, which will extend from the Tioga field in northern Pennsylvania to Syracuse, crossing the line of the Home Gas Company in the vicinity

of Horseheads, thus making possible an easy diversion of gas from one pipe line to another.

In Steuben County several wells have been drilled in the town of Rathbone, northwest of Addison, but these do not reach the Oriskany. They are bottomed at levels of from 800 to 1,250 feet and single wells have yields estimated at over 1,000,000 cubic feet a day. Other shallow wells in Steuben have also reported production.

One well has been drilled in Cayuga County, three in Tioga, one in Tompkins and four in Chemung, none of which has shown production on a commercial scale. So far wells in these counties have been dry for the most part.

An instrument of war has been put to use in locating the natural gas resources of Central New York. Portable field seismographs, developed to a high standard of efficiency during the World war by both the German and allied armies to locate gun emplacements, are being used in the Wayne-Tyrone field.

Farmers have received their first lessons in seismography from field parties of college trained men sent by oil companies. The particular job of these experts is to determine the sub-surface geology and the possibilities of future gas fields. For equipment they use a seismograph, dynamite, wires, photostat and other apparatus—all mounted upon a truck.

A charge of dynamite of approximately three pounds is lowered in a hole twelve feet deep. Water is used as a "tamp" and when the charge is exploded, the resultant sound waves "reflect" when they hit a hard stratum, such as the Canandaigua limestone. With their apparatus and a photostat a record is made of the physical properties of the geological structures and strata hidden below the earth. Time, sound and distance enter into these problems of practical physics and geometry. Depths of the "reflecting point" determine the depth of the strata.

SALT MINES.

From the salt mines of Central New York, hundreds of thousands of dollars in white crystals are taken annually to ship in train and barge to all parts of the world. Watkins Glen at the

head of Seneca Lake, in Schuyler County, was one of the earliest sites of extensive salt operations. It lies in the center of one of the richest salt industries in the United States, the products there alone amounting to more than $1,000,000 annually. Two large salt companies are located there, the International Salt Company of New York with a plant two miles north of the village at the lake shore and the Watkins Glen Salt Company, whose plant is in the village at the end of the lake.

One of the finest salt deposits in the world underlies Watkins Glen at a depth ranging from 1,700 to 1,800 feet below the lake level. There is an inexhaustible bed of salt averaging 400 feet in thickness. The annual salt production of the two plants is 175,000 tons or from twelve to fifteen car loads a day. The salt is withdrawn from the beds far beneath the lake, where it was deposited millions of years ago, long before coal deposits were formed. By modern methods of drilling, water from the lake is introduced through pipes and then lifted, saturated with brine to the surface by use of compressed air. The brine flows in a steady stream from pipes reaching down into the beds, to settling tanks where all foreign matter is removed. The resulting pure brine goes to evaporators.

Under a different process of production, 150,000 tons of salt a year comes out of the mine of the Cayuga Rock Salt Company at Myers on the west side of Cayuga Lake near Ithaca. Two thousand feet below the waves is a marvelous crystaline city, where cars scurry along railroad tracks, machinery accomplished its wonders and men labor and drink water. The salt bed is known as the "Saline Shale Area," which crops out near Syracuse and is known to extend over an area of seventy-five miles east and west and seventy miles north and south across Central New York. Tunneling continually into the salt, the workmen have opened in a comparatively short time some two miles of passages. A half ton of dynamite is used daily in blasting.

After being hammered through grating into the required size, the salt chunks are hoisted to the surface, four tons at a time, to be dumped at the top of the head-frame and to pursue their course through a crushing and screening mill of 600 tons

daily capacity. No fine table salt like that produced at Watkins is made on Cayuga.

The mine at Myers had its inception from John W. Clute, salt magnate of Watkins Glen. At Cayuga's head he discovered a salt stratum of eight to ten feet in thickness, underlying the surface by 1,450 feet. Here a shaft was sunk in 1916 and operations continued at this level for two years, with limited success. Finally the workings were abandoned and soon filled with water. Then in 1921 a new plant arose from the desolute diggings. The Cayuga Rock Salt Company was organized in July of that year to take over the property under lease of the Clute interests. Production started from the same bed in June, 1922, and continued until February, 1924.

Diamond drilling disclosed a high grade salt bed ten to forty feet in thickness at a level 2,000 feet below the surface. A shaft was extended below the first level and the new salt bed struck at 1,925 feet in August, 1924. This salt was found to average 99.19 per cent pure sodium chloride and the old mine nearer the surface was ignored. The yield from the new bed is 30,492 tons per acre, with a proven tonnage of 1,950,000 of salt waiting to be extracted. In addition to its Myers holdings, the company owns 600 acres on the opposite side of the lake, which have potential deposits of equal richness.

CHAPTER XXI

Y. M. C. A. MOVEMENT IN REGION.

HISTORY OF DOZEN ASSOCIATIONS WHOSE PROPERTY IS VALUED AT $1,100,000, WHOSE ROSTERS CARRY THOUSANDS OF NAMES AND WHOSE OPERATIONS COST OVER A QUARTER OF A MILLION A YEAR—INDIVIDUAL ORGANIZATIONS' HISTORY REVIEWED.

Young Men's Christian Associations in the Central New York area today represent one of the best organized boy movements for the upbuilding of character and physical vigor in the entire district. They are Auburn, Canandaigua, Clifton Springs, Cortland, Cortland County branch, Elmira Central, Elmira D. L. & W. Railroad branch, Elmira Pennsylvania Railroad branch, Geneva, Hornell, Ithaca City, Cornell University Christian Association, and the inactive associations of Canisteo, organized in 1877; Corning, 1879; Horseheads, 1896; Steuben County, 1920.

These associations have a paid membership of 7,000 of which 2,000 are boys. However, this number represents only a small percentage of those served by the organizations. Hundreds of men and boys participate annually in baseball, basketball and bowling leagues conducted by the Y. M. C. A.s on a non-membership basis. The Hi-Y work, educational courses, industrial and religious programs are also promoted on a non-membership basis, as well as the annual Learn-to-Swim campaigns, with over fifteen hundred being given specific instruction in swimming and life saving in this area last year. Eight hundred different boys attended the summer camps last year, many of whom were not Y. M. C. A. members. The Older Boys Conferences also attract large numbers each year.

The property value of the twelve associations in the district is $1,110,000, entailing an annual operating budget of $230,000.

There is a total of 650 rooms available in the dormitories and scores of men avail themselves of a "Home away from Home." A staff of thirty-two employed officers are engaged in promoting, together with the assistance of earnest lay leaders, a program which seeks to help in the development of all round personality among boys and men of the region.

Interesting data relative to the innovations in athletics and other activities introduced by the Y. M. C. A. organization, has been compiled by Kenneth R. Kester, secretary of the Auburn Y. M. C. A., who traces a summary of outstanding points in the history of the movement.

The Young Men's Christian Association movement had its inception in London, England, in 1844, largely through the vital interest and zealous efforts of a single young man named George Williams, who, in 1894, upon the observance of the fiftieth anniversary of the founding of the Association Movement was knighted by Queen Victoria in acknowledgment of his "distinguished service to the cause of humanity."

Sir George died in 1905 in his eighty-fourth year, and was laid in his final resting place in St. Paul's Cathedral, while a grateful world paid tribute to the founder of a movement which was destined to become world-wide.

It was on Blackfriar's Bridge that George Williams one evening suggested to a companion his idea of an association of young men. A meeting was called and was attended by twelve of his companions. Before adjournment, an association was formed whose object was the "improvement of the spiritual condition of young men engaged in the drapery and other trades" in London. This new organization spread very rapidly throughout Europe.

EARLY AMERICAN ASSOCIATIONS.

The first association to be organized on the American continent was in Montreal in 1851, with the Boston association being formed within a month. It was about 1865 that the larger American associations, under the far-sighted and inspiring leadership of that veteran Y secretary, Robert McBurney, gave a

new interpretation to the object of the association movement—that it should be not only for the improvement of the spiritual condition of young men, but also the mental, social and physical.

It has been this development of an all round personality which has motivated the Y. M. C. A. ever since that time.

Because of this broader concept, the Y. M. C. A. has found it possible to be a pioneer in the development of many worthwhile enterprises. We mention but a few: It was the first, under the name of the Christian Commission, to carry on a welfare program for soldiers during the Civil war and has continued to serve in a similar way in the wars which the United States has been engaged in since that time. It was the first to institutionalize the boys' summer camp, which was begun by Sumner F. Dudley in 1885, and has continued to make large contribution in bringing the summer camps to their present high standard. The Y. M. C. A. was the first to foster public school athletic leagues and in conducting night schools; and, notwithstanding severe criticism at the time, took the game of bowling, which was found largely in saloons, and pocket billiards, which flourished chiefly in pool rooms, and placed them in a wholesome environment. The Association has made an outstanding contribution in the development of the indoor gymnasium and swimming pools; of particular value is the instruction in swimming and life saving. Both the game of basketball and volley ball are inventions of the Y. M. C. A.

The Y. M. C. A.s were pioneers in popularizing Bible study for men. The Week of Prayer, Older Boys' Conferences, Father and Son Movement, National Thrift Week and the Hi-Y Movement for High School boys, are likewise developments of the Y. The campaign method of raising funds was first used by the Y. M. C. A.

The Y. M. C. A. still stands as the most successful organization in making the Foreign Missionary work indigenous, and also helped very materially in the development of the men and Religion Forward Movement.

A program especially applicable to college and university students, industrial and railroad groups, the Army and Navy

men has been carried on for many years by the Association movement.

Today the Y. M. C. A. is organized in practically every nation in the world, while in the United States and Canada alone there are 1,500 associations with an enrolled membership of 1,059,-666, and an employed staff of 4,777.

The property and equipment value of these associations is $249,998,900, necessitating an annual operating budget of $61,-464,400. There are also 811 boys' camps owned and operated by the American associations.

The development of the association movement in this state has largely been possible through efforts of the State Committee, the first state convention of which was held in Oswego in 1869. Most of the Y. M. C. A.s of the state were organized by the state committee. Many of them would have ceased to exist had it not been for the committee's services, but during the past twenty years the associations have grown so strong that they no longer need the committee's aid. The State Committee, through its staff, is now initiating developments and improving various program features; an instance of this is in the Hi-Y, where the number of groups has doubled in the past three years.

AUBURN Y. M. C. A.

The Auburn Association is the second oldest in the region and ranks among the twenty-five oldest Y. M. C. A.s in the United States.

"A handful of young men met on September 13, 1859, to consult and determine whether an organization might be formed to be known and designated as the 'Young Men's Christian Union.' "

Through the energy and promptitude of the young men present the Auburn Association was officially organized October 7, 1859, with By-Laws completed and officers elected.

The Association was chartered in 1867 with John H. Osborne, Edward C. Selover, Henry G. Starin, Charles C. Button, Jesse D. Smith, Alanson L. Palmer, Edwin L. Ford, John F.

Driggs, George R. Hopping, Stephen G. Hopkins and Edward C. Marvin serving as the Board of Managers for the first year.

For many years the Association rented quarters at 10 North Street (Academy of Music Building). In 1884, after months of serious considerations and careful planning, the Board of Directors determined to raise money for the erection of a permanent home. Problems which taxed the courage of the most enthusiastic were encountered. When the bids were opened they far exceeded the amount subscribed; serious difficulty in securing an adequate foundation because of sand encountered; threatened law suit by city officials because the pilasters had been extended beyond the building line, are but a few. Sufficient, however, to indicate the scope of the problems.

However, all of these difficulties were overcome and the building, which was formally opened December 18, 1885, was the most imposing structure of Genesee Street. It was probably the largest and most beautiful Y. M. C. A. building in any of the smaller cities of the country.

J. M. Elliott was the architect. Much credit for the financial success of this undertaking is due to Dr. George Black Stewart, Frank E. Swift and John J. Trowbridge, members of the Finance Committee, and Charles P. Mosher, treasurer.

William B. Dunning, president of the Association, in his annual report of 1885 advised that "the lot cost $14,000; the contract price of the building about $39,000, to which must be added a number of "extras" not contemplated by the committee, but which became necessary as the work progressed."

He stated further his belief that "When the work was fully completed Auburn would have a building worthy of the work which is to occupy it, which will not only be an ornament to the city, but at the same time a monument to the people whose liberality has made its erection possible and whose support, moral and financial, we hope to continue to merit."

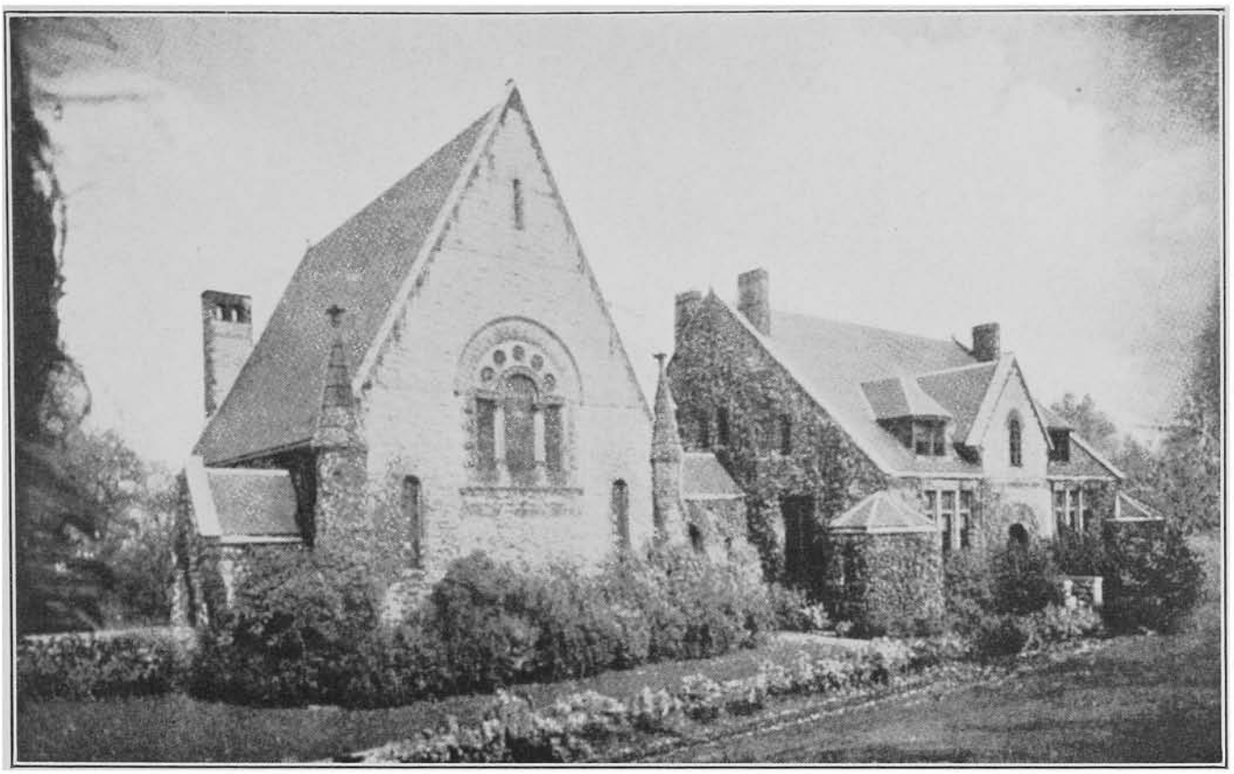
September 10, 1897, the Misses Caroline and Georgiana Willard announced the munificent gift of an athletic field to the Y. M. C. A. The site was then wooded land known as Burts Woods and owned by the Auburn Theological Seminary. The

gift not only included the cost of the site of seven and one-half acres of land, five of which were to be used as an athletic field and two and one-half acres for a public park, but also the cost of grading and construction of a quarter mile bicycle and racing track, and tennis courts; the erection of a grandstand seating 1,000 people, with ample dressing facilities; also a beautiful clubhouse and a ten foot fence enclosing the entire field. For many years it was rated as one of the finest athletic fields in the state, and even today continues to be one of the most popular outdoor recreation centers in the city. The Y field faces on Steel, Swift and Mary streets. Courtney C. Avery, president of the Board of Directors, Rev. W. H. Hubbard, a member of the board, and Irving W. Street, general secretary of the Y. M. C. A., made a large contribution in adjusting the many details incident to this timely and worthwhile gift.

The Auburn Y Boys Summer Camp was established in 1913 and has been operated each summer since that time. On May 22, 1922, upon the recommendation of George Underwood, Jr., at that time a member of the Board of Directors, the Charles Thorne property, located on the east side of Owasco Lake ten miles south of the city, was purchased for a permanent camp home. The purchase included four acres of land with over six hundred feet of lake shore front, and a large ten room lodge. Many improvements have been made since that time, largely through the efforts of the Y. M. C. A. Business Men's Club.

ITHACA Y. M. C. A.

The story of an organization is usually the story of the interest of individual men in its objects and success. This is especially true of the Ithaca Y. M. C. A. The first record available is dated November 23, 1868, when a meeting was called to form a Y. M. C. A. George R. Williams was chairman of this first meeting and it was he whose interest, leadership and generosity followed the association through all its experiences until the time of his death. Among the others who were active in that organization were Henry B. Lord, who later was president of the First Na-



AUBURN THEOLOGICAL SEMINARY, AUBURN, N. Y.

HIGH SCHOOL, MORAVIA, N. Y.

tional Bank. Mr. Lord was the first president of the association, and P. L. Foote its first secretary.

Meetings were held at regular intervals in the reading room of the Cornell Library. Committees were appointed on membership, devotional meetings, missionary work, employment, sick and boarding. It was evidently an organization for young men as the constitution provided that only men under forty years of age could become a member. There were five classes of membership, active, associate, counseling, life and honorary.

This organization lasted only a little over a year so far as any records are available, but it left its imprint on the lives of several men who later became leaders in the religious and civic life of Ithaca.

The next period of the movement in Ithaca was from 1889 to 1907. Several names are outstanding in the work of the organization then—George R. Williams, Henry A. St. John, Thomas G. Miller, Judge Jared T. Newman and many others. During this period the Association had a varied experience. Its work broadened from a distinctive religious program to the three point program for the spirit, mind and body, establishing evening educational classes, gymnasium, lectures as well as religious meetings. The financial problems seemed to be the most difficult. For several years rooms were rented in the library building. Quarters were later secured in a building at the corner of Seneca and Tioga streets where a gymnasium and shower baths could be established. Some five years later this had to be given up. The Journal Block on West State Street was the next scene of activities where rooms were rented and social, reading rooms, gymnasium, shower baths, and bowling alleys were conducted.

It was in 1907 that the concept of a new building took definite shape under the leadership of Sidney L. Howell, who was then president of the association. A strong committee was organized to promote the enterprise. On July 1, 1907, the lot on which the present building stands was purchased from Mary E. Humphrey. Success was not assured until a large initial gift was made by George R. Williams on condition that $50,000 be

secured in pledges. A campaign was organized and with the impetus which Mr. Williams' gift gave the movement the full amount was secured and the directors proceeded with the erection of a new building. Gibb & Waltz were chosen as architects and they got out plans which were regarded as the best for a small city of any in the country.

The new building was completed, opened and dedicated on the evening of October 12, 1908. Dr. Lyman Abbott being the principal speaker. The building contained reading rooms, social rooms, boys game and social rooms, dining room, kitchen, ladies' room, four class rooms, thirty-eight dormitory rooms, gymnasium, locker rooms, bowling alleys and swimming pool. The membership jumped almost immediately to over 400.

A new building, however, brings its problems. The cost of operating the new plant was such as to give the trustees and directors grave concern. The first five years the annual deficit was alarmingly large. Then one day it was learned that the association had been made the residuary legatee of the estate of Charles T. Chittenden, a late resident of Tompkins County. There was considerable difficulty in the settlement of the estate. It was only through the services of such men as Judge Jared T. Newman, Oliver L. Dean, Henry A. St. John, Charles D. Bostwick and others that a final settlement was made and the association received approximately $79,000. An indebtedness of $33,000 which had accumulated was paid off, leaving an endowment of $46,000. Obviously this relieved the grave financial problem, and also released much time and energy for the real work of the organization. For over forty years this organization has stood for the best in the life of young men and boys of Ithaca.

CORNELL UNIVERSITY C. A.—C. U. R. W.

A few faded words in an old leather-bound book record the founding of the "Christian Association of Cornell University" in 1869, with the stated object "to promote the Christian religion among the students of Cornell University and to improve our spiritual, mental and social condition." During the sixty three

years which have intervened the Association has had an unbroken existence, and achieved national prominence for at least two different accomplishments.

Cornell University was founded with a religious purpose, but along liberal, non-sectarian lines. Naturally this spirit needed to be incorporated into the religious association. Yet it was a distinct surprise when the outside world saw upon the Cornell campus in the undergraduate days of John R. Mott, Cornell '88, the largest college religious association in the country. Mr. Mott showed then, in his college years, the same vision and energy for which he has been renowned throughout the world for the past two generations. The membership of the association was less than fifty when he entered, and over 400 when he left.

Two other names are especially prominent in the first decade or two of the association's existence: George R. Williams, who started to raise the fund for the religious building, which was later augmented by a generous gift of one of the trustees of the University; Alfred Smith Barnes, for whom Barnes Hall was named; Professor Emeritus George L. Burr of the class of 1882, a leading member of the faculty and a leading spirit in the Christian Association, has made his major contribution in writing a history of tolerance, and that major interest he has also reflected in his academic work and religious interests for the past fifty years.

In a changing world only those organisms survive which are able to adapt themselves to their changed environment. During the life of the association Cornell has grown from a college of a few hundred students to a university of 6,000 students. During its history the association has tried to meet the needs of each generation of students and discontinue any work which was no longer called for. For a while the Christian Association worked independently of the churches; for a while there was a tremendous interest in the mission movement; for a while the men and women worked together, then separated, and now cooperate; an organization which is thriving one year may be dead as a doornail five years afterwards—but, there is always some other group to take its place.

There was a time when denominations competed with each other, but for the last thirteen years there has been an almost unique spirit of cooperation in the Cornell United Religious Work, often referred to as the "Cornell" plan, for now seven different university pastors, from as many different denominations have their offices in Barnes Hall, an interdenominational headquarters, as well as each having a church home in connection with an Ithaca church. This plan originated in Cornell with the coming of R. H. Edwards in 1919 and has been directed by him ever since. A Catholic priest and a Jewish rabbi have taken their places on the staff and Religious Work on the Cornell campus is thus united in the Staff and Board of Control and Student Cabinet. Never since the founding of the University have so many different students been reached by the organized religious forces.

CORTLAND CITY AND COUNTY Y. M. C. A.

On Saint Patrick's Day in 1868, less than a quarter of a century after the original Young Men's Christian Association was organized in London, a branch was organized in Cortland. It met a great need in the community life and had grown until, in 1876 at the eighth annual meeting, the budget was $1,077.86 with a deficit of $264.53. In May, 1888, this association was incorporated under the laws of this state and began definite work under A. C. Howe, the first general secretary. During the next ten years the association had successful representative teams in baseball, football, basketball, and relay races. There were also a bicycle club, a camera club, a summer camp for boys as permanent features.

Between 1889 and 1913 the association suffered a serious lapse and the interest in a program for men and boys for the community was kept alive by a very devoted ladies' auxiliary. The first contribution made to the building fund for the new building, the corner stone of which was laid in 1915 was a sum of $4,000 contributed by this same ladies' auxiliary.

Since the present building was opened the work has progressed and developed. In 1925 a unique feature was added

when E. L. Martin, now of Middletown, New York, was transferred from a responsibility for city boys' work to a responsibility for work in this whole trade basin. At first in the enthusiasm of a new venture communities were served by the association to a distance of thirty-five miles from Cortland. But it was soon discovered that intensive work was much more fruitful than extensive work and, at present, Groton, Homer, McGraw, and McLean are using the association program for boys and girls extensively. The most flourishing portion of this work is with high school boys and girls. Cortland was the first city association in New York State to place upon its staff a full time man for activities in communities outside the boundary of the local city.

In 1925 also a camp site of eight acres on an island in DeRuyter Reservoir to be used as a summer camp for boys was purchased by the Association. The Young Women's Christian Association share this property now for a summer camp for girls. A rather extensive program is maintained in boys' work, industrial work, educational work, and physical work having the best cooperation from the churches, the school and the commercial and industrial institutions of the community.

GENEVA Y. M. C. A.

The Geneva Y. M. C. A. owes its origin to a meeting of persons interested in the formation of an association for young men in Geneva, which was held in the chapel of the First Presbyterian Church, January 31, 1886. At a subsequent meeting held February 14, 1886, an organization was perfected under the name of "The Young Men's Christian Union." On September 14, 1886, this association was reorganized as "The Geneva Young Men's Christian Association." The association was incorporated under the laws of the state, August 9, 1888.

The old Scotch church, dedicated in 1832, which occupied the site of the present association building, was the home of the new association. It went into possession of the Scotch church March 1, 1887, and was used by the association until it was torn down to make way for the new building.

The Geneva Advertiser commenting, in 1889, upon the work of the Y, stated that "the association is doing a grand work in Geneva. The young men are earnest in their work. They say: 'Come with us.' It means entrance into better society for those who will cast off impure and immoral associations and try to do right. The 'Old Scotch Church' has been converted into a real home missionary establishment."

John L. Bennett was chosen president in 1886, resigning in 1891. Much of the success of those early days was due to the untiring and efficient management of Mr. Bennett. On March 9, 1891, a committee was appointed to consider the matter of erecting a new building.

The munificent legacies of Miss Laura Carter, James Simons, and John V. Ditmars, together with gifts of many other contributors, finally made the erection of the new building possible. The lot upon which it was erected, valued at $7,000, was donated to the association by J. I. Maxwell. The total cost of the building, including lot and furnishings, was $52,800. The architects were Pierce & Bickford of Elmira, and the builders D. B. Morrison and Persons & Siglan of Geneva. The cornerstone was laid April 19, 1893, by the late Dr. A. B. Smith, president of the Board of Trustees. The building was destroyed by fire in 1902 and the present structure built on the ruins.

The building is a four-story structure 70x80 feet, the first story of pressed brick, with brownstone and terra cotta wings for the second, third and attic stories. The building is located on the corner of Castle and Genesee streets, fronting on Castle.

The general secretaries who have served the Geneva Y. M. C. A. are C. B. Wagner and F. B. Stanley, 1887; A. P. Gillett, 1889-1895; E. L. Mogge, 1895-1900; George E. Burgess, 1900-1902; Dennis (acting) 1902-1903; C. B. Pomeroy, 1903-1906; A. B. Smith, 1906-1911; Frank Olmstead (acting), 1911; B. H. Geise, 1911-?; A. C. Price, 1916-1918; C. W. Baldwin, 1918-1919; W. G. Warr, 1922-.

For years the association carried on an active program with practically no financial problem until the panic of '97, when it encountered its first difficulty. From then until twenty years

ago the indebtedness grew until a mortgage was necessary. However, in 1924 a $25,000 campaign was carried on and this mortgage was cleared up.

It might be well to note that from time to time small amounts have been left the association until now there is an endowment of a little more than $9,000.

PENNSYLVANIA R. R. Y. M. C. A., ELMIRA.

The Y. M. C. A. Pennsylvania Railroad branch in Elmira is one of the oldest railroad Y's in the country, its first meeting having been held in 1880. On a Sunday afternoon a few of the Erie, Lehigh Valley and Pennsylvania system men gathered in the Erie station to take first steps toward organization. Later a building and equipment were secured and in 1881 by-laws were adopted.

In 1895 a Ladies' Auxiliary was organized with fifty-two members and this organization is still functioning and active. As the work grew, the association was cramped for room and in 1902 moved to its present quarters nearer the shops and rail terminal.

Dreams of a new building caused D. G. Stevens, secretary for sixteen years until he was retired in November, 1931, to plan and hope for such improvement. The first step toward the ambition came in 1923 when the association purchased a large house and double lot, expecting to build some day. No construction has been done, but the house has been converted into a kitchen and dining room downstairs and lodge and social rooms are upstairs.

LACKAWANNA R. R. BRANCH Y. M. C. A., ELMIRA.

On the corner of West Church Street and Railroad Avenue, Elmira, stands a little brick building, now occupied as a drug store, which is the first building used exclusively for Y work among railroad men in the United States. There had been work among the men, previous to the opening of this building, but it was carried on in such places as were available, and not in a building given over entirely to railroad work.

The work on the Lackawanna was started in the old yard office and later transferred to a division office building about 1888. The present building was erected in 1928 by the railroad company at a cost of $125,000. This company has appreciated the work of the association among its employees and contributes generously to the work at eight points on the system.

Originally a Bible class, the work has expanded, and now embraces service features in its program, dormitory and restaurant for the convenience of members, bowling alleys for league games, baseball and basketball teams, System tournaments being held from time to time at various points. The association has a staff of twelve employees and is self supporting; that is the work is carried on without help from community chests or local contributions.

ELMIRA CENTRAL Y. M. C. A.

The Elmira Central Y. M. C. A. was organized in 1858. The first meeting was held in the drygoods store of D. Thompson Dunn, then at the northeast corner of Lake and Water streets. At its organization rooms were decided upon in Ely Hall, where the Y remained for ten years, when a fire drove them out. When the Opera House block was erected, rooms were obtained there. Rufus Stanley was secretary for several years when the association was located in Carroll Street.

In 1898, a new building was erected in connection with the Steele Memorial Library. The Y. M. C. A. part of the building was approximately 160 feet long, forty-two feet wide and five or six stories high. The idea of dormitories was not incorporated in the plan, the upper floors being used for offices. Among other units, the building included bowling alleys, gymnasium, running track, a theater, and social rooms.

Nine months after the building was opened, it was lost by foreclosure, due to failure of at least two and possibly more of the large gifts, the donors having fallen upon bad times. A local man recently graduated from Yale University was the general secretary during this period. He was an unusually dynamic type and particularly effective in his work for boys. He re-

signed from the Association and started a piece of work which has since developed into the 4-H Clubs. This man's name was Rufus Stanley.

The Association moved into rented quarters, and through rummage sales, suppers, etc., raised enough money to pay up old bills and pay for new furniture. In about 1910, Elmer Dean, who was president of the Board of Directors, had an opportunity to buy a building occupied by a printing company. He bought it in the name of the Y. M. C. A. and paid for it before he was sure that the Board of Directors would back him. He has often laughingly said that he was the only man in town who had ever owned a Y. M. C. A. This building was remodeled and used until 1921.

In 1921 the Y raised a little over $300,000 for a new building. Cooperative spirit developed in this enterprise starting a series of such major financial projects which in total within a period of four or five years raised over $2,000,000 in the city for worthwhile projects.

In raising this fund, a word should be said about the initial gift made by Frank Baldwin, president of the Thatcher Milk Bottle Company. His gift of $25,000, an unprecedented amount to be given for such a purchase up to that time, electrified the town. A little group including Fred I. Eldridge, state secretary, secured this initial gift.

M. Doyle Marks, president of the association, whose courage and enthusiasm had much to do with the success of the enterprise, invited the board to meet at his house. Members of the board that night made personal gifts bringing the total to over $60,000.

Prices were increasing to such an extent that it was necessary to raise $93,000.00 more two years later, which was done.

While the new building was under construction, the Y was without equipment, but carried on extension work with some thirty churches and twenty-seven industries having in the neighborhood of a thousand men and boys actively engaged in such recreational programs as bowling, basketball and baseball leagues.

The Ladies' Auxiliary bought and funded a forty-acre camp site on Keuka Lake, and with the cooperation of luncheon clubs and some individuals erected tent houses, a lodge, etc.

Y. M. C. A.'S IN CANANDAIGUA, CLIFTON SPRINGS, HORNELL.

The Canandaigua Y. M. C. A., organized in 1904, was preceded by the Young Men's League, and purchased from that organization its fine building which was remodeled in 1905. The last Y year book gave the Canandaigua association membership as 508, of which 193 were boys. The Y has a three bed dormitory, its property being valued at $15,000. Alfred W. Armstrong is president and Ralph C. Stratton secretary.

For a time Clifton Springs was recognized as the smallest village in the nation with a full time paid Y secretary and athletic director. The Y there, organized in 1877, at last reports had 164 members, of whom sixty-four were boys. H. H. Griswold is president and Harold R. Weaver secretary. Its building is valued at $27,000.

Hornell Y, founded in 1877, has a forty-four bed dormitory in connection with its association building. Its roster numbers 653, of whom 242 are boys. It also operates a summer camp. L. G. Robbins is president and William T. Cook secretary of the association. The association's property is valued at $53,500.

CHAPTER XXII

THE FINGER LAKES.

ROMANCE OF THEIR HISTORY AS AVENUES OF PROGRESS—FIRST BOATS—STEAMER LINES—FISHING RESOURCES—TRADITIONS AND STATISTICS ON CANANDAIGUA, KEUKA, SENECA, CAYUGA, OWASCO AND SKANEATELES LAKES—OTHER SMALLER LAKES.

Across the blue of the Finger Lakes, strange craft of varied races have for two centuries written a romance of history. No sisterhood of lakes in America has equal significance in the story of empire building in America. From the time the war canoes of the Iroquois moved stealthily across uncrowded waters, the lakes have formed a sapphire pathway for commerce, for war, for adventure.

The French were the first white men to gaze upon these inland waters. Early Jesuit priests a century before the Revolution, penetrated the wilderness to set up the Cross. Their canoes crossed the waters to minister last rites to the dying and to bring comfort to the afflicted among the red men.

Then came Sullivan's hosts in 1779, marshaling a third of the Continental army to crush America's most dangerous Indians who had their citadel of power among the lakes. These heroes in homespun destroyed thirteen Indian villages on a single lake, effecting the greatest destruction ever wrought in America before. But here on the greatest watershed in the East they opened wide the gate for development of the great West.

When the stages of pioneers rumbled over corduroy roads, white winged sloops for passengers and freight formed the one sure means of transportation in the 5,000 square miles of territory across which are splashed the Finger Lakes like a great outstretched hand of welcome.

Then came the steamers, their whistles starting the echoes between the everlasting hills. And now the staccato bark of the motorboat is here. Intercollegiate crews have battled for supremacy across the waters and power boat racers have roared to victory in competition, where pioneer ferries once laboriously carried the covered wagons of pioneers ever westward.

Royalty in exile has sailed the lakes when forests cloaked their 600 miles of ambling shore line. Presidents, distinguished statesmen from other lands, the high and the low of many generations have frolicked on the beaches. The world's first seaplane rose from the waters of one of the lakes. Great wheels of factories half way across the state turn to the music of the rumbling power stored in the reservoir of the lakes. Cities drink of the sparkling waters, which today, through the Barge Canal spur, are linked in a blue waterway to the seven seas.

From eleven to forty miles in length, the Finger Lakes are bordered by 400 great glens and gorges, through which tumble a thousand waterfalls, a few of which are higher than Niagara. One of the lakes is the deepest within the United States with the exception of Lake Michigan and Lake Tahoe, California. Another is the only one in which the water flows in two directions. Two of the lakes are unique because of the "Death Drums of the Iroquois," or "Lake Guns," a strange subterranean sound heard along the shores in summer. All of them have unique features, making them distinctive on this continent.

And over them all there is a mangle of weird legends of spectre boatmen, of sea serpents and Indian myths accounting for the eccentricities of the waters themselves. Even in their names the red men left imperishable reminders that he discerned glory in their beauty before the white man began writing history in the new world. Canandaigua, Keuka, Seneca, Cayuga, Owasco, Skaneateles—their very names breathe of the background of history and romance which is theirs in full measure.

CANANDAIGUA LAKE.

Where Iroquois legend recounts that the red face originated, there is Canandaigua, most western of the Finger Lakes. Its Indian name means "The Chosen Spot," where trout, bass, pick-

erel and white fish bite as voraciously as in the day of the red man.

Sixteen miles long and a mile and a half wide, the lake is 686 feet above tidewater and reaches a depth of 262 feet. Nature destined Canandaigua Lake and its environs to be a summer resort. But the redoubtable Senecas, most powerful of the Six Nations, fathomed this destiny long before the pale face penetrated Western New York.

Within a few miles was the principal village of this haughty people and on the great hill near the head of the lake they lighted their council fires. Indeed, from the mighty Ge-nun-dawah, the Bare Hill of modern days, they had their origin. There is an Indian tradition woven about this majestic promontory, stripped of its trees and rising like a sentinel of the shore.

Ages ago, according to the legend, the Senecas were trapped upon the hill by a great serpent, which daily devoured the marooned red men. Finally only one brave and his squaw remained. Then the Great Spirit commanded the warrior to dip his arrow into an herb and shoot the poisoned shaft beneath the scales of the monster. A sure shot—and the serpent rolled down the hillside, tearing out the trees and disgorging in his death struggles the heads of his prey. To this day peculiar skull shaped stones, "the heads of the Senecas" fringe the east lake shore, and are used for fireplaces, winding walks and pillars of summer homes.

Navigation in the lakes dates back to early in the nineteenth century, and regular steamship travel was abandoned only in 1928. The first steamer was the Lady of the Lake, built and owned by Canandaigua capital and launched in 1823. The second steamer, the Ontario, was begun at Naples and floated down to Canandaigua where it was finished in 1845. The third boat was the Joseph Wood; the fourth, the new Ontario, and the fifth, the Canandaigua, built in 1865.

Still later came the Peoples' Line, which operated the Genundawah. The Canandaigua Lake Steamboat Company organized in March, 1890, with $35,000 capital stock. The boats of this company included the Onnalinda, built in 1887; the Ogarita, built in 1889 and the Seneca Chief, a small and old boat put on