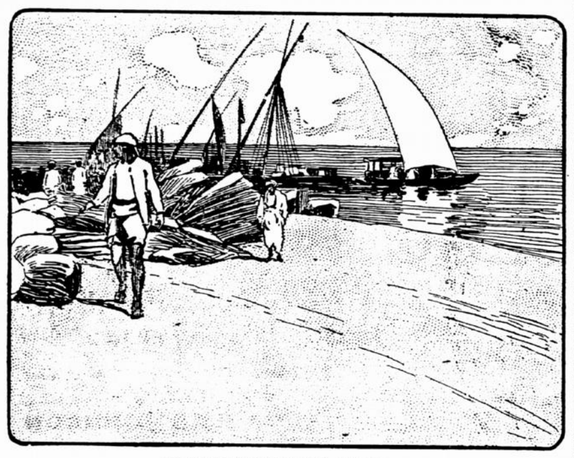
The Conditions of To-day Along the White Nile

OPENING OF THE RIVER TO FREIGHT AND PASSENGER TRAFFIC READS ALMOST LIKE A DREAM

THE opening of the White Nile to regular steamer, and even to tourist, traffic, reads almost like a dream to those who remember the difficulties and hardships narrated by Schweinfurth, Sir Samuel Baker and other explorers only some 30 years ago. During the latter years of the khalifa's rule, a long stretch of the river became so obstructed by sudd that navigation was altogether impossible, and it was only in the early part of 1903 that the energetic work undertaken by the Soudan government rendered its upper reaches once more accessible. On January 1, 1904, a regular service of luxurious paddle steamers was inaugurated, running from Khartoum to Gondokoro and back in about 26 days.

After leaving Omdurman, the river soon becomes some two miles or more in width, and for a day or two the country is still desert in character, with a few mimosa trees on the banks. The first stopping place of importance is El Dueim, the starting point of the caravan route to El Obeid, in Kordofan. Here for the first time the typical African round huts are seen, closely resembling haystacks or old-fashioned beehives. It is a busy town, with good bazaars and markets, the shore strewn with sacks of gum arabic, and covered with camels eager to drink after their long march from the west. By the third day the



ON THE SHORE AT EL DUEIM.

desert is left behind, the river is considerably narrower, and the reedy banks, park-like country, dotted with trees and copses, and general coloring strikingly remind us of England, when a hot August has parched and whitened the grass. Abba island, where the mahdi lived a holy life and received the first revelation of his mission, might be in the Thames, were it not for its 30 miles of length and the breadth of the stream on either side.

Fashoda, now officially called Kodok, is six days' voyage from Khartoum. All

SUDD CUTTING ON THE UPPER NILE.

that is traceable of the French occupation is Col. Marchand's shadouf-watered garden of bananas and vegetables, and the mounds and trenches of his fort. A few nomadic Arabs of rather a low type are still seen as far south as this, but it is the center of the most important of the black tribes of the Nile, the Shilluks. Formerly a fine and fighting race, they were terribly reduced in numbers and vigor by the depredations of slave dealers and the misrule of the khalifa. In many respects they resemble their neighbors of the west and south, the Dinkas, the Nuers and the Bari. All alike are very tall and thin, often appearing painfully underfed, and from living in marshes they seem to have caught the customs of the birds, walking with a peculiar crane-like stride, and habitually standing on one leg. At military stations a little clothing is usual, but the only essential of native dress is for men the spear and for women two small aprons of untanned and uncut hide. To prevent the attacks of mosquitoes, many men smear their bodies with grease and ashes with most uncanny effect, which becomes quite devilish when daubs of red paint are added and the hair stuck on end and dyed red. In hair dressing the Shilluks are completely distinguished from the other tribes. It is said to take some eight years for a Shilluk dandy to dress his hair to his satisfaction. He has to sleep with his head resting upon a wooden pillow specially designed to do no harm to the structure, the commonest forms of which are a ridge like that of an ancient helmet down the middle of a shaven head, or a halo of felt-like substance standing out from the back. Necklaces of beads and of certain small crocodile bones, and massive ivory bracelets weighing as much as 26 ounces are also worn by men. A war dance is a most impressive sight, when, with long hide-covered shields and brandished clubs and spears, with feathers and erect fringes of hyena hair added to their coiffure, and leopard skins draped on their slim bodies, they bound over the plain with wild yells, raising a cloud of dust behind them. This demonstration is the preliminary to an attack on a rival village, or is held in honor of some great event, such as the accession or investiture of a new "mek" or king.

At Lake No, seven days' steam from Khartoum, the Bahr-el-Ghazal joins the Nile, and the sudd begins. For nearly 300 miles the narrow channel winds through a limitless expanse of papyrus, partly rooted, partly floating, and at times completely blocking the river. Sir S. Baker was obliged to go round by the Bahr Giraffe owing to such a block, and in 1880 Gessi, an Italian official, failing to find the current, had to cut his way through, lost many of his men, and suffered so terribly that he died shortly after rescue. The monotony of the winding channel is frequently relieved by lagoons, and it is in these that the larger crocodiles and the hippopotami with their jovial rosy faces, best loved to sport, 20 or more of the latter being sometimes seen in a shoal. The wild hippopotamus differs as widely from our grimy, torpid, bun-eating acquaintance at the Zoo as a Scotch mountain sheep does from his cousin at London park. About half way through the sudd, a few miles of solid ground, covered with bush and fine euphorbia trees, occur on the west bank. Here a field hospital has been established for the sudd cutters, two steamers, several boats and about 300 men being still engaged in clearing the last "block," which is meanwhile circumvented by a false channel, i. e., a channel lacking current. The floating masses of vegetation frequently close up again like arctic pack-ice where a clearing has been effected, and so render vain the laborious days of work. At the Shambe lagoon the sudd practically ends, though marshy ground continues for some distance further south. The river becomes narrower and still more winding, and trees increase in number till they form dense forests. Elephant tracks are numerous, and when the water dries up in the pools and swamps they are frequently seen drinking and bathing in the river, while giraffes, lions, rhinoceros and baboons are occasionally met with.

The Lado Enclave on the west bank, leased by the Soudan government to the Congo Free State, is the prettiest part of the journey. The bank is high and clothed with thoroughly tropical forests with beautiful glades, and mountains come into view in the southwest. The troops and their families form the only population, and all come from the interior of the Congo territories; they are of various tribes—Bongo-Bongo, cannibal Niam-Niam, and others. In physique they offer a marked contrast to the Nile races, being short, sturdy, thick set and stolid-faced. The officers are mostly Italians and vie with the British in their courtesy and hospitality. A few hours' steam from Lado brings us to Gondokoro, the northernmost station of the Uganda protectorate. Here for the first time we find the British flag flying alone. The natives of the district are of the Bari tribe, distinguished some 30 or 40 years ago for its unfriendly attitude to the few Europeans who came

HUTS AND STOREHOUSES AT GONDOKORO.

in contact with it. With slave-raiding a thing of the past, and security assured by a good government, they now give little trouble. Many of them are now serving in the Uganda rifles, two companies of which are quartered at Gondokoro. Perhaps nothing gives a stronger impression of the enormous length of the Nile than the reflection that, although this pot lies over 1,600 feet above sea level, steamers from the Mediterranean have reached it without the aid of locks. But even when the river is in flood it is only navigable as far as Rejaf, a few miles further, and so, with regretful longing for the great lakes that are so near, we turn northward again.

Salt Water and the Skin.

Sea bathing is a curative agent in almost all diseases of the skin. Pityriasis versicolor or "blotches," pruritus senilis or the "itch of the aged," chronic, stubborn cases of eczema and "ring-worms" yield to the healing effects of salt water.

GOSSIP FROM SKANDINAVIA

The trip of the Swedish young men's chorus to Trondhjem, Norway, was a very great success. One concert was given in the cathedral, which was crowded by an enthusiastic audience, and 8,000 people attended an open air concert.

FINLAND.

Helsingfors, June 27.—The Finnish senate at the first session following the assassination of Governor General Bobrikoff issued a manifesto deploring the general's death and expressing deep indignation at the "revolting crime." It points to the dangers of continued agitation, and closes with this appeal: "The senate directs an earnest appeal to all right-minded inhabitants to co-operate for the restoration of quiet and order in the country, and to endeavor, each one, to justify the confidence which the Finnish people, after a century of indissoluble union with the powerful Russian empire, has had the good fortune to enjoy on the part of the Russian sovereign, under whose beneficent protection Finland has developed in the most fortunate manner, both spiritually and materially.

The Jakkula estate in Hvittis has been bought for $50,000 by the state, and it is to be parceled out among people who own no land.

New York, June 23.—The local branch of the Finnish National society cabled to correspondents in Finland to ascertain the truth of the report that a revolution had begun in Helsingfors. In answer the society has received the following cablegram: "Satisfaction general. No serious consequences expected. Authorities in great perplexity. Convocation of the landtdage is improbable. Every one profoundly thankful."

The sow finished the fox. It is not often that Reynard becomes the prey of such a stupid animal as the hog. But it did happen at the Hirvela farmstead, Orimattela. Time and again a fox had visited the hen-pen and helped himself to a fine dinner. When the big sow gave birth to pigs the fox felt like varying his menu and went for the sweet little morsels. One evening the farmer heard a fearful noise coming from the hog-pen, but he happened to be too busy to find out what the trouble was. The next morning he was astonished to find Mr. Reynard lying stark dead in the hog-pen. The sow had taken into her head to protect her offspring and had succeeded to a degree.

DENMARK.

Peschke-Koedt, a Copenhagen manufacturer who for years has distinguished himself by the humane treatment of his employes, is in the toils of the labor unions. As he did not belong to any employers' union he felt at liberty to pay any wages, and he made it a rule to pay his employes a little more than the scale accepted by the unions and paid by his competitors. But some time ago he found that he could no longer pay more than others, and at the same time the labor unions "caused a disturbance in the technical management of his business," for which reasons he notified his employes that after a lapse of three months he would pay only the wages established by the union scale. But the labor union proposed an arrangement which would have been still more unsatisfactory to Mr. Peschke-Koedt, and now he is ventilating the matter in the press in a manner which is not flattering to organized labor.

NORWAY.

A comparatively new grist mill at Hof, near Holmestrand, was destroyed by fire. The proprietors were Johan and Fredrik Sundby and Mrs. Jakob Lindseth. The insurance was $11,000.

The city authorities of Fredrikshald have bought one-half of the Brekke waterfalls for the purpose of enlarging the electric power plant. The price was $13,500.

Miss Albertine Fridtz has been appointed to a position on the police force at Alser and she will be the first woman to wield a policeman's club in Norway.

Proportional representation was not a success in the local governments in Mandal, and members of the two great parties have proposed to return to the old system.

About the middle of June there were 2,500 boats and 10,000 fishermen on the Finmarken fishing grounds. There was still plenty of fish close to the shore, but the men have been leaving for home since the first of June.

The first iron sailing vessel owned by residents of Trondhjem has just been bought in Liverpool by Jacob Schervig at a cost of $20,000. The displacement is 1,145 tons.

The political clubs of the temperance people of Trondhjem have passed resolutions in favor of curtailing the liquor traffic in many ways.

The ting (county legislature) of Romsdal amt (county) has voted a contribution of $75,000 to a proposed railway along the Rauma river, and $35,000 to one along the Surna river.

A report dated June 10 says that the crops look exceptionally fine in Romsdal amt.

Mrs. Prof. Michelet and Miss Gina Krogh, who represented the Norwegian women at the women's congress in Berlin, made a fine impression. The resolution which the congress passed against the "white slave trade" was introduced by the Norwegian women.

The sealing expeditions to the Arctic ocean are having poor success.

The funds owned by the University of Norway are so large that the income from that source is about $90,000 for the present year.

A new volume published by the statistical bureau of Norway contains a diagram which shows that crimes increased at a rapid rate in Norway during the years 1814-1840, and that there was a general decrease during the remainder of the century. The improvement coincides with the temperance movement and the anti-saloon legislation.

Rouen, France, June 8.—The statue raised here in memory of Ganger Rolf was unveiled today in the presence of 10,000 persons. The address was delivered by the president of the Normandy Memorial association. Afterwards the tomb of Ganger Rolf was visited and to Queen Alexandra of England and the empress dowager of Russia the following telegram was forwarded: "Two hundred thousand Normans celebrating the memory of their Scandinavian ancestors convey their most humble greetings."

The crops are looking very promising in southern Norway.

Kristofer Janson, who organized and served a Unitarian congregation in Minneapolis, is preaching every Sunday in the Kristiania labor union, and his audiences are always large. Rev. H. Haugerud, who has served Unitarian congregations in Minneapolis and in the states of Washington, Massachusetts and Wisconsin, preaching in English and Norwegian indiscriminately, is at present serving the Unitarian congregation in Kristiania. His services are held in the hall of the students' union.

About 5,000 barrels of cod liver oil was produced in Finmarken during the past year.

Ex-Premier Emil Stang celebrated his seventieth birthday June 14. He invited a number of friends to his home at Sandviken. From political friends and foes alike he received numerous congratulations.

SWEDEN.

The revenues from the whisky distilleries for the first five months of this year were about $1,500,000, as against $3,525,000 for the corresponding period of 1903.

Eight houses were reduced to ashes at midnight in Malmberget, Norrland, rendering sixty persons homeless. There was no insurance on the property.

Forest fires have done considerable damage near Finspong, Lindesberg and Gafle.

The great suffrage extension bill which was drawn up by the government and defeated in the riksdag will again be introduced in the riksdag in 1905, and its provision for proportional representation will be retained.

P. P. Waldenstrom, the leader of the Swedish Mission Covenant, is highly displeased with the new version of the Bible, though the work was done by some of the most suitable men in the state church of Sweden.

Swedish lucifer matches are so popular all over the world that manufacturers in different counties are in the habit of putting the well-known Swedish directions on the boxes containing their matches.

The Swedish people has had no day corresponding to the Fourth of July in the United States, the Seventeenth of May in Norway, the Fifth of June in Denmark, etc. Such a day is quite handy to have, and the Swedes have been looking around for one. Two dates have been mentioned prominently, the sixth and the twenty-fourth of June. Both of these are very important in the modern history of Sweden. The sixth of June marks the election of Gustaf Vasa as king of Sweden and also the adoption of the constitution of Sweden, and on June 26th Gustaf Vasa entered Stockholm as newly elected king, and King Gustaf Adolf landed on German soil during the thirty years' war. So far the sixth of June seems to have the best chances. The annual festivals at the Stockholm Skansen point that way. In Jemtland the monument to Georg Adlersporre, the hero of liberty, was unveiled on that date last year, and a resolution was passed to celebrate the day every year. This date has also been officially stamped as a public holiday, the consuls having been instructed to hoist the Swedish colors in the same manner as on May 17 and November 4.

The Vossische Zeitung deplores the failure of the government to provide for the construction of the proposed Moselle canal. Through this canal the iron-making industry of Germany could have been supplied with iron ore from the Lothringen ranges instead of sending enormous sums of money out of the country. The same paper remarks that the German iron manufacturers have found it expedient to close a contract with the Grangesberg company of Norrland, calling for a total delivery of 14,000,000 tons of iron ore at a cost of about $60,000,000. The contract covers a number of years.

A number of small farmers in Dalarne have made a trip through certain farming communities in southern Sweden and in Denmark for the purpose of obtaining information on up-to-date farming on a small scale.

German scientists seem to have gone rather far in making investigations in old ruins in southern Sweden, digging in the ground where they had no permission to do so, and even carrying away relics found by them.

The head of the Karls Krona artillery regiment petitioned the king for a loan from the national treasury to enable the officers to procure bonds of their own, but the petition was not granted.

E. Kjellanger of Kosta, who is 74 years old, has made a "glass clock." With the exception of a few small spindles everything is made of glass and the clock is a strange looking thing. It runs twenty-four hours when wound up.

C. T. Odhner, the noted historian, is dead. He was connected with the University of Lund during his most productive period.

Negotiations conducted under the leadership of Governor Lagerbring failed to settle the conflict in the stonecutters' trade in the neighborhood of Lysekil.

A few persons in Gothenburg have issued a call for the organization of a society against the "white slave trade."

A lively agitation is carried on among the farm laborers of Skane for the purpose of organizing them into labor unions.

The roll of the Swedish army and an epitome of that of the navy have just been published. The generality comprises six foreign kings or princes, two generals, besides the crown prince, three lieutenant generals and ten major generals, besides Prince Carl.

MINNESOTA NEWS.

Driven by Hunger.

Driven to desperation by the pangs of hunger, Frank Hickey, about 20, and a recent arival in Minneapolis, snatched a purse from a woman as she was standing in front of the show window of a Nicollet avenue department store.

After getting the purse Hickey made a plunge through the crowd, dodged around a show case that stood in the doorway, but was hemmed in and apprehended before he could make his escape.

Hickey cried bitterly when locked up, saying that he had never been in trouble before and laid the blame to the desperate straits he had been in since his arrival in the city.

The woman whose purse was taken heard the story Hickey told the officers and declared that she would not prosecute the young man.

"The purse contained only two dollars," she remarked, "and I believe he is telling the truth and I haven't the heart to prosecute him."

All Women.

The convention of the Ladies Catholic Benevolent association, which will be held in Saint Paul, July 19-20, will be an event of more than usual interest. The association is a fraternal insurance society for Catholic women, and the fact that it is managed entirely by women makes it unique among the larger successful business enterprises of the country. All of the supreme officers of the association, with the exception of supreme spiritual adviser, are women and there are no men connected with the association in any capacity except as medical examiners. The men would be probably excluded from these positions were it possible to secure in all places competent women physicians.

At the Fair.

Arrangements are being made by the state fair managers to make the live stock department and the race program more attractive than ever. The premium list for live stock and the race program have been revised and amplified by the managers for the next fair, which will open Aug. 29. The race program will be enlarged by two purses of $1,000 and $2,500, making the total of purses offered more than $25,000. The meet is expected to be the most important held in the west this season.

The most interesting departure in the live stock department is the offer of a score of premiums exclusively for sheep owned in Minnesota.

Found in the River.

The body of a young woman was found in the river by workmen at the St. Paul boom. It was afterward sent to the county morgue, where it remains unidentified. There are indications of foul play, but as Coroner A. W. Miller is out of the city no official investigation has been made.

A long, narrow neck scarf, such as is worn by women, was tied tightly in four knots about the neck, the skin was broken and the tongue protruded from the mouth. It is supposed that the woman was either strangled before being thrown into the river or had attempted to strangle herself, and failing to accomplish her end, jumped into the river.

Accidents.

A brace of accidents have been recorded near St. Cloud. Martin Kelly, foreman of the large Whitney farms four miles from there, is lying at death's door as the result of a scythe falling from a tree and striking him in the neck. A gash requiring ten stitches was cut and the walls of the carotid artery penetrated. Jacob Bier of St. John's university at Collegeville fell from a machine shed, eighteen feet to the ground, breaking both arms below the elbows, fracturing his nose, and sustaining other injuries which make his recovery doubtful.

Injured by Torpedo.

Mrs. John Swenson was badly injured by flying sand from a torpedo while riding on a Minnehaha car in Minneaplis. Some boys bombarded a street car. One of the torpedoes went off inside the car and the sand flew in her eyes. She was taken to her home by her friends and the police were asked to find the boys.

News Notes.

Commissioner McConnell says the other states formed a pool to do up Minnesota in the World's Fair butter contest.

Three barns near Crookston were struck by lightning and burned. Three houses were struck in Crookston; two horses were killed for G. A. Tullar, near Angus, and several cows killed for William Tripp, near Warren.

The twentieth annual convention of the Minnesota State Pharmaceutical association met in Winona with 200 delegates in attendance.

The Crookston city council has selected a site for a public market, a plan which might well be adopted by many other towns.

Siver Peterson, a resident of Red Wing, visiting in St. Paul, jumped into the Mississippi river to escape from three highwaymen.

The summer school at the normal in Winona opened with more than sixty pupils enrolled. This is for the six weeks' term.

Excitement is running high in South Haven over the mysterious death of Ethel Steps, a handsome and popular young woman.

Residents of White Bear, it is said, oppose granting the street car company a franchise for the extension of its Wildood line to White Bear village. The people are not opposed to the car line, but want it to be an extension of the Phalen line, which would give a direct line to St. Paul.

Topsy, a little black dog owned by Sergeant Flynn of the Nineteenth infantry, now stationed at Fort Snelling, won her way into the hearts of the commissioned officers at the fort yesterday by aiding in the capture of an escaped prisoner.

A section gang found an unidentified man two miles east of Doran, in a ditch near the railroad tracks. He appears to have fallen from a train, and is still unconscious.

There has just been held at the village of Pickwick the semi-centennial of the erection of the first house in that valley.

ROUND ABOUT THE STATE.

Odd Felows of Minnesota meet in Minneapolis.

The First Minnesota holds its annual reunion.

Kennedy is to have a big Fourth of July celebration.

The Minnesota Sons of Veterans bars Sunday picnics.

Frank Effel is disappointed in love and takes carbolic acid.

Siver Peterson jumps into the river to escape highwaymen.

Mrs. Bluma Strauss, 167 State street, is burned almost to death.

Governor Van Sant is made "M. A." by Cornell, Iowa, college.

The plant of the Northern Cooperage company is destroyed by fire.

The attorney general decides that caviare is neither fish nor game.

Walter Rosenholtz, 418 Rondo street, is drowned at White Bear.

The Twin City building at the St. Louis exposition is dedicated Monday.

Telegraphers of La Crosse, Winona and Dubuque have organized a branch of the Commercial Telegraphers' union.

I. N. Chilew of Duluth was re-elected state commander of the Maccabees of the World.

The residents of the village of Luce have organized a creamery company, with $3,000 capital.

Dr. Samuel G. Smith of St. Paul is elected president of the national charities and corrections.

The state inspectors report that the Twin City dairies are in better condition than ever before.

Mary Sauber, thirteen years old, falls from a swing at the public baths in St. Paul, and may die.

The official report of the trip of the State Editorial association praises the Minnesota building at the fair.

P. N. Lungren, a farm hand near Slayton, committed suicide by shooting. He had been drinking heavily.

Schmidt Brothers' new wagon and carriage factory was opened at Perham. It will employ a large force.

Frank Benke, an old farmer living west of Perham, had both legs broken above the knees yesterday while operating a stump puller.

There were fifty-six cases of smallpox reported to the state board of health during the week ending June 13.

The village council of Elk River will call a special election for voting on bonds for a bridge across the Mississippi

State Auditor Iverson is not satisfied with the condition of the land market this year, and may not offer any state land for sale.

Frederick Stanwood Bailey of St. Paul is the only graduate from Minnesota in the Sheffield scientific school at Yale university.

The town of Becker in Sherburne county purposes to continue the fight for the removal of the county seat from Elk River.

Bert Hattlivick, a section hand on the Northern Pacific railroad, was drowned at Hinckley in the Grindstone river while bathing.

The Minnesota Bankers' association began its fifteenth annual convention today at Tonka Bay hotel, Lake Minnetonka.

Fire almost entirely destroyed the business portion of Altura, twelve miles from Winona, on the Great Western.

The Head of the Lakes fans are eagerly discussing the prospect of the Duluth team entering the American association next year.

John Adank, a farmer of Buffalo county, fell from his wagon, which was loaded with lumber. The rear wheel, which was locked, passed over his head, killing him.

At a special school meeting held at Swanville it was voted to issue $6,000 in school bonds for the purpose of erecting a school building.

The annual convention of the Minnesota State Pharmaceutical association opened at Winona with large attendance.

The body of a middle-aged man was found floating in the Stewart river near York. Judging from its appearance it must have been in the water about a month.

John H. O'Dell, a resident of Maple Plain, died as a result of injuries received while he was trying to steal a ride on the Great Northern train.

Dr. James H. Dunn, one of the pioneer physicians of Minneapolis and the state, was found dead last evening in his room in the Southern hotel, St. Louis.

The state summer school opens at Mankato with an enrollment of 425, which is more than double the enrollment on the first day a year ago.

The Crookston Journal reports a sample of wheat eighteen inches high brought in there a few days ago, which is a remarkable length for the plant at this time of the year.

At Bemidji a number of men left the circus and made application to join the army at the local recruiting station. Seven were enlisted, but a large number of the men who made application were turned down.

Charles Lundahl, an iron worker, fell from the top of a six-story building at Snelling avenue and Randolph street, St. Paul, and died at the City hospital.

The Soo people are having trouble over a right-of-way over near Badger, Minn., and the county commissioner from that district has been called on to help effect a settlement.

Ralph M. Jaeger of Minneapolis stood highest in the preliminary examination for admission to the Anapolis academy, held under the direction of Congressman John Lind.

A bolt of lightning struck the Rock Island freight house on the west side in St. Paul, plowing its way the entire length of the building, and struck a street car which was passing near the freight depot at the time.

The body of Andrew Thompson was found on the Chicago Great Western right-of-way near Heath Creek bridge, about a mile south of Northfield, with his back broken near the shoulders.

The fact that he smoked from a dozen to fifteen big black cigars a day is given as an indirect cause for the death of Fred Nelson, a well-known Minneapolis cafe owner, who was found dead.

Many dairymen's picnics will be held this summer throughout the state under the auspices of the state dairy and food commission and county associations.

Silk Culture Experiments in the United States

THEY HAVE BEEN TRIED WITH VARYING DEGREES OF SUCCESS SINCE COLONIAL TIMES

THE efforts that are being made by the agricultural department to stimulate interest in the silk industry in this country revives interest in the various previous efforts in this line.

Since early colonial days there have been spasmodic efforts made at establishing a silk industry in this country. As early as 1660 Mr. Aspinwall established nurseries of the mulberry at New Haven and Mansfield, Conn., and on Long Island, and imported eggs of the silkworm. These efforts were continued for more than 100 years without achieving other results than to keep the interest in the subject alive, and were finally arrested by the war of the revolution. About 1771 silk culture was attempted in both Pennsylvania and New Jersey, and was continued until the war put a stop to practically all industries, but it was partly revived after the treaty of peace with England had been signed.

A few people retained their interest in the industry during the early part of the nineteenth century, and in the late twenties a resolution was introduced into the house of representatives directing the compilation of a manual on the culture of silk. House document No. 226 of the Twentieth congress, first session (1828), is a treatise on the rearing of silkworms, by Mr. De Hazzi, of Munich, translated from the German, apparently by Mr. James Mease, of Washington, D. C. This seems to have been the first congressional action favoring silk culture.

Following the publication of the book mentioned there began a determined effort to establish silk culture on a firm basis in the United States. It was estimated that four tons of silk cocoons were produced in 1833 in the county of Windham, Conn. Individuals in Massachusetts were said to have cultivated it with success for 30 years. This interest in silk culture soon passed beyond bounds, and there originated what is known as the Morus multicaulis craze. Anticipating a most profitable investment, if not speedy riches, thousands of individuals purchased mulberry plants of the Multicaulis species and planted large areas of valuable land. The investments far exceeded possible returns; heavy frosts destroyed the plantations of trees, and in the course of a few years the many failures and great disappointments caused so complete a revulsion of feeling that not only was silk culture practically abandoned all through the states, but the very name became a byword.

Ten years or more after the discovery of gold in California had attracted many thousands of people to that state, and at a time when its extraordinary agricultural prospects were first beginning to be exploited, the silk industry began to raise its head there. Near San Jose, in 1861, a Frenchman named L. Prevost, having begun the propagation of the mulberry, succeeded in raising excellent cocoons. In the transactions of the State Agricultural society for 1864-65, Mr. Prevost published a short article on silk culture in California, in which he showed that his first plantings were made in 1853 or 1854, and that he had induced two ladies, named A. Packard and E. Goux, of Santa Barbara, to start a plantation of 3,000 trees, with the result that in 1864 they raised five pounds of silkworm eggs. Plantations had also been made in the San Joaquin valley, and 50,000 trees had been set out near central Utah. The profits anticipated by Mr. Prevost were largely in the sale of eggs, and he stated that he had received orders from Italy for 100 pounds and from Mexico for 500 ounces.

In 1865 the legislature of California offered a bounty for the production of mulberry trees and silk cocoons, and in the transactions of the state agricultural society for 1866-67 it was stated that the liberal action of the legislature and the success which attended the production of mulberry trees and silk cocoons had induced the starting of a very extensive factory at San Jose. The statement was made that the necessary machinery had been purchased and imported.

After the subsidence of the craze, silk culture was kept up on a small scale at San Francisco by Mr. J. Neumann for many years.

When, in June ,1878, Prof. C. V. Riley was appointed entomologist of the United States department of agriculture, he brought with him from Missouri a strong interest in silk culture and a conviction that this industry could be established in the United States.

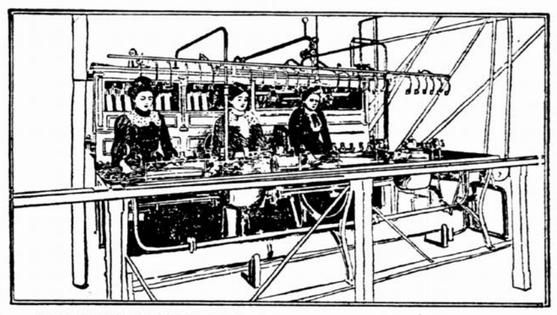
In 1882 trees were sent out to correspondents of the department and the report was made that among the Mennonites in one of the western states mulberry trees had been planted in thick hedges at the limits of the fields and both sides of the highways and byways. The trees were cut down one-third at a time every three years, furnishing an abundant supply of fuel and also serving as windbreaks. These people had almost 20,000 pounds of cocoons on hand for sale.

In the spring of 1885 some 8,000 mulberry trees were distributed, as well as a quantity of silkworm eggs. No cocoons were bought by the department, but examinations were made of home-raised eggs. Two stations had been established after the congressional appropriation became available—one at Philadelphia and the other at New Orleans. At Philadelphia 518 pounds of cocoons were reeled, producing 96 pounds of raw silk. The quality of the cocoons handled was thus shown to be very bad. They cost on the average 85 cents per pound, so that the raw material used in the production of a pound of raw silk cost $4.58. The raw silk produced was sold for $4.40 per pound, by which it was shown that the cost of the raw material was greater than the value of the manufactured product. This result was laid to the inexperience of the raisers.

The California work during this year was reorganized, and there was reeled at San Francisco 44 pounds of silk. An effort was made during the winter of 1884-85 by Mr. Joseph Neumann and some others to launch the "California Silk Culture Development company," with a capital of $100,000, but the attempt was a failure.

For the fiscal year 1885-86 congress again appropriated $15,000. The reeling establishments in San Francisco, New Orleans and Philadelphia were abandoned toward the close of the fiscal year. Silkworm eggs were distributed in the spring of 1886; circulars were sent out all over the country offering to purchase cocoons, and at the beginning of the fiscal year 1886-87 a Serrell automatic reel was set up under a new appropriation from congress.

The last appropriation made by congress was $20,000 for the fiscal year ending June 30, 1891. An estimate for a continuance of this appropriation was made by the then secretary of agriculture, but the appropriation was not made by congress, and the work of the



SILK REEL IN OPERATION AT DEPARTMENT OF AGRICULTTURE.

department in silk culture ceased for the time, (June 30, 1891).

From that time on very little was done in the United States in the way of raising silkworms. The Utah people formed, during the nineties, a ladies' silk association. Five persons served as commissioners, and received pay from the state. In various parts of Utah, settled by the Mormons, an abundance of white mulberry trees had been planted. The new commission bought every year a supply of eggs, which were distributed in small lots among the Mormon settlers. In the course of time a number of women were selected from among the more skilled silk growers to go from place to place and teach the reeling of silk to children. They received no salary, and their only compensation was free board from the farmers. The reeled silk was for a time sold in New York, but later the market was closed. In the meantime a small silk factory sprang up in Salt Lake city, which, in time, bought a small proportion of the silk produced in Utah. The cocoons were reeled upon hand reels built according to Japanese models, and a part of the raw silk was woven by the people themselves. Silk dyeing was not attempted, but the silk was sent to New York for that purpose.

In 1901 the present secretary of agriculture, who had been traveling extensively throughout the country, and particularly in the south, investigating the agricultural conditions and possibilities, came to the conclusion that every possible effort should be made to ameliorate the condition of the extremely poor people of the southern states, and particularly of the colored race. Among the many ideas which suggested themselves to him was that of silk culture, which he very well knew was a household industry in other countries and added materially, not only to the national wealth and prosperity of those countries in which it was carried on, but also to the family incomes of the extremely poor. He therefore, during the following session of congress, asked for an appropriation of $10,000 for investigations in silk culture, which was allowed.

Congress during its session of 1902-1903 repeated the appropriation of $10,000, adding to it the clause making appropriations for entomological investigations, and under this appropriation the division of entomology is working at the time of the present writing.

All of the correspondents to whom silkworm eggs were sent were notified that the department would buy their cocoon at European market prices, and several hundred pounds were purchased in this way and were reeled during the summer. The raw silk thus produced, while excellent in quality, has not been large in quantity, and of course the expense of production has been prohibitive from a commercial point of view. It is the object of the department in thus purchasing domestic cocoons to create what might be termed an artificial market for a time, in order to interest individuals throughout the country in learning the art of silk raising, to stimulate efforts in the production of the best possible cocoons (since the prices paid are graded), and to keep alive the interest so far as possible until the time comes when other and more natural markets shall be supplied.

DEFECTIVE PAGE