



PRESERVE THEM FOR BUCKS COUNTY.

The collection made for the Bucks County Historical Society, by Mr. Henry C. Mercer, is unique in itself and indigenous to our county. This is not to say that there are no other counties where there are colonial relics, but there are probably few counties where so many and so varied tools of the Nationmaker can be found, in so excellent condition, or where their history and connection with events can be more accurately or better traced.

Bucks County was largely settled by English Friends and by the Germans. These two classes were substantial, conservative people, mostly of course agriculturists. From the last of these conditions it came about that they had and used the implements and appliances pertaining to primitive life in the new country; and their thrift and conservatism are to be thanked that they preserved these relics. It follows also that the descendants of these early settlers took care of their heirlooms and heritages, in remarkable manner, and that the latter are in existence to-day. Then, too, Bucks was the Founder's County. It is older than most counties of the State, older than most in the United States, and therefore had all of the best chances to have an early history, to have preserved tangible evidences of the pioneer days, and to be able to collect and present them for examination and study.

Growing out of these facts and conditions the collection assembled by Mr. Mercer, and now in possession of the Historical Society, is singularly unique and inherently most valuable. Already so much and so widespread interest has been aroused, and so large importance is attached to the subject, that correspondence is coming in and the attention of collectors is being turned towards Bucks county as a new and promising field for a new and promising collecting mania.

There are several sorts of collection efforts which are liable to come along, and as to these it seems proper to extend a word of caution. As to collectors who make a trade of the business, simply for the profit there is in it, there is little to be said. Our people will know what to do with such collectors, and it will not be a matter of sentiment or patriotic pride, upon either side, in these cases. The collector will buy and the owner will sell, upon the basis of a profitable money transaction, and it is nobody's business but their own. There is also the selfish personal collector, who desires to get memorials for the gratification of his own pride or tastes. He should be turned down promptly.

struggles, their purpose and their success cannot but incite patriotism and kindle his purpose among their descendants to be worthy of such ancestry.

To this end the collection of the Bucks County Historical Society will tend in no small degree, and the benefit to proceed from the present movement and purpose, demonstrated at the special meeting, can scarcely be overestimated or compared with any other historical undertaking.

For the inception of the work now begun too great acknowledgment cannot be made to Mr. Henry C. Mercer, whose personal efforts have been the chief factor in collecting and classifying the tools of the Nationmaker, and whose acquaintance with and research in folk lore and ethnology have enabled him to render a great service to his native county and in behalf of his home people, their ancestors and their history.

The subject so auspiciously opened up to the public on Thursday, promises to be one of immense value and benefit, not only to the Bucks County Historical Society, but to this community, the county and the public at large. Similar lines of work should be and doubtless will be taken up and pushed, along local lines elsewhere, with the certain promise of large returns, for material, patriotic and educational interests, wherever industriously conducted.

His collection will do no real good to the county, the community, himself nor the generous donor. The scientific and historical collector has our respect, but in Bucks county he should be said nay. His effort would take away our memorials and disassociate them from the county and our people and make them simply types in some outside museum. This is not inherently a bad or useless purpose, but one which should be served only secondarily and after our own home interests have been fully taken care of and when we have duplicates.

Bucks county's tools of the Nationmaker should remain in Bucks county. They belong to this territory and this soil, and this people.

Along with their history should go sentiment and respect; awe, and reverence. With them our forefathers conquered the wilderness and provided food and shelter for their families; or our foremothers wrought in their household avocations and prepared victuals or fabricated clothing.

While the use of these early utensils is now discarded, they carry us back in their associations to the times when sturdy men and strong women wrought and worked to win homes in the wilderness, and when the necessities of life were the forerunners of the luxuries we enjoy to-day. Their possession and contemplation inculcate lessons of patriotism, and in many cases they are the only tangible memorials of the great days of the infancy of the Nation.

As these things belonged to our forefathers and foremothers, they should remain among us and be cherished by us, for what they teach and represent, more than for what they are. We should collect them, care for them, study them and love them. We should not let them go out from among us. We should not even shut them up in private museums. Against professional or selfish collectors we should be on our guard.

We should take care of all the tools of the Nation maker, the memorials of the country's early days, and preserve them for Bucks county, as Mr. Mercer's work and the purpose of the Historical Society are calculated to do. We should show them to our visitors, exhibit them to our guests, permit and help scholars and historians to study them; but keep them at home, where they belong, in honor of our ancestors and with the pardonable pride in our county and her people which is justifiable and creditable, which is reverential and honorable, which is helpful and ennobling, which brings the past to help the present and teaches filial respect from the present to the days of long ago. By all means preserve the memorials in Bucks county, for Bucks county, and let us have as large and complete and excellent a collection as we may of the tools of the Nation maker, for the credit of past and present generations.

THE HISTORICAL SOCIETY.

The special meeting of the Historical Society on the 7th inst., was a conspicuous success. The first of its kind, in one of the oldest counties in the State, comprehending a unique and most important collection of memorials, the exhibit was highly creditable and deeply interesting, and reflected much honor upon as well as gave much promise for success of, the work of the society.

It is and must be of the utmost importance to the student and the patriot, as well as of interest to the historian, to know the origin of races, their environment, modes of life and means of existence and occupation. As throwing much light on the early history of the American citizen the tools of the Nationmaker occupy a first place. They prove what our progenitors did, how they lived, what occupied their thoughts and time and their advance from the struggle for existence to a grade of large education and more leisure and enjoyment.

These relics teach of the sturdy efforts and earnest endeavors of a strong and persistent people, whose courage and enduring and whose resolution and industry were unflinching. To learn of such people and to realize their

LESTOWN

THURSDAY, DECEMBER

BUCKS COUNTY RELICS.

Our Tools of the Nation Maker
Inspected Elsewhere.

MR. MERCER EXHIBITS AND

Explains the Bucks County Historical
Collection B-fore the Franklin In-
stitute in Philadelphia to a Deeply
Interested Audience.

[From the Ledger of Dec. 3]

An extremely interesting lecture was given at the Franklin Institute last evening by H. C. Mercer, of Doylestown, on "The Tools of the American Pioneer." It was illustrated with lantern slides, showing in detail about a thousand specimens which have been collected and are now on exhibition at the Court House in Doylestown by the Historical Society of that place. The lecturer has been largely instrumental in making the collection, and was fortunate in finding still living old people who had personally used tools like those exhibited. Photographs showing these old men using the tools as in times gone by were thrown upon the screen, and gave a clearer idea of the life of the early settlers of this country than any word painting could have done.

Mr. Mercer, who is an archaeologist, traced the origin of many of these tools to the nations from which they were brought, and pointed out those which were distinctively American. A large majority of them had remained unchanged, from the days of the Romans down to about 1820 or 1830, when, from some cause not clearly ascertained, the rapid development of domestic implements commenced, and has continued with unparalleled rapidity until now. To those of the audience who had seen, and even used the implements shown, it seemed almost incredible that so few specimens yet remained in the country, so completely have many of them disappeared.

Two of the old wooden mould-board plows are in the collection, and the objections raised by the farmers that the new iron plows "poisoned the land" seem ridiculous enough to-day. The collection contained grain sickles, quite unlike the grass hooks now in use; scythes, grain cradles, which succeeded the sickles and were in turn driven out by the reaping machine; hewing axes for squaring timber, frows for splitting shingles and axes of various patterns. The hatchet, Mr. Mercer said, was a purely American invention. At first a small axe, then its poll was made into a hammer, and a sill was cut on the flat side for drawing nails. It took the place of an axe, hammer and claw, the three tools being still exclusively used in many European countries.

Coming to culinary apparatus, Mr. Mercer showed the old fireplace, with its trammels and pot hooks for hanging the pots over the wood fire on the hearth; the long-legged skillets, which stood over the fire; the crane from which the pots were hung, and which could swing off the fire when desired; the old tongs, the Dutch oven, surrounded by hot embers for baking bread.

nonites of Bedminster and Plumstead until about 1840.

Mr. Mercer said that the domestic animals of this country, the sheep, cow, dog, etc., were imported; that the native animals were never domesticated, although we had the big horn sheep, the buffalo and other hardy animals, which would, no doubt, with proper cultivation, have been superior in many respects to those we have. The Indians had domesticated the wolf, from which our dogs have descended. He forgot to say that the great American turkey is an exception to this sweeping arraignment.

Then another photograph showed the good housewife making apple butter out under a tree, where her two big iron kettles were hung from a crotch and cross-piece, and partially surrounded by a stone barrier against the wind.

It is in the memory of many when nearly all the everyday clothing of the farming community was made on the farm, and linen being produced from flax grown in the fields and the wool sheared from the backs of sheep. Every good farmer had the implements for dressing the flax and the females of the household were skilled in the art of spinning the flax and the wool and weaving it into cloth, plain, in stripes or plaids, colored with their own hands, and made by them into serviceable garments. These implements were shown in great variety; the flax brake for breaking up the outer husk of the plant, the swingie for beating it off the floor, the hetchel for combing it into shape, the flax wheel for spinning, the quill-wheel for winding it and the hand looms for weaving.

Shoemaking was done by neighborhood shoemakers, who went from house to house and stayed at each long enough to "sew up the family." They were called "catwhippers" and were treated with great consideration by their hosts. The wooden lasts were shown on the screen, each member of the family having his own last, a straight one (there were no rights or lefts).

And then there was the family lantern, made of tin and looking like a tall oil can of the present day. It was punched full of small holes, close together, usually in patterns. Inside a short piece of candle made a light something less than a Philadelphia gas light and something greater than a lightning bug, and by the aid of this the farmer fed his stock and milked his cows early in the morning and night in the winter, or went into his cornhouse cellar to get his hard cider. The candle moulds in which he utilized his tallow in an improved method of making candles, better than the tallow dips which he used to make by lifting the cotton wicks in and out of the melted tallow on a cold day, were illustrated by an odd set show on the table of specimens. And then the candlesticks were shown in great variety, all with a hook at the top by which you could hang them on the back of a chair.

It is difficult for this generation to understand how our grandfathers got along without matches, but a tinder box in the hands of Mr. Mercer made it very plain. A small square tin box with a false lid, in which was some tinder (scraped rags or the pith of rotten wood, punk), a piece of steel and a flint made up the equipment. The cover was taken off, the steel was struck a downward blow by the flint and the bright spark fell on the punk, which was then coaxed into a flame and the candle was lighted from it. When out of dry tinder the people borrowed fire from the hearth of a neighbor a mile away, bringing the hickory coals home covered by ashes.

Mr. Mercer had on exhibition a large number of lamps, running back in a series from the earliest kerosene lamp back through the fluid (turpentine and alcohol), whale oil, lard oil, the hanging oil lamps of Italy and Holland, to the fat lamps of the prehistoric flint workers of England, probably the oldest lamps in the world.

Mingled with the implements and utensils of American and English origin were those brought here by the early Dutch and German settlers of Eastern Pennsylvania, and the distinguishing characteristics of each were very marked. Specimens of illuminated handwriting done by the German schoolmasters in the country school houses were shown, some of them of great beauty. They were the survival, in the early portion of this century in America, of the mediæval art of manuscript illumination, which received its deathblow on the invention of printing. It lingered among the Men-

GIFTS TO THE HISTORIANS.

Valuable Herbarium and Specimens of the Iron Caster's Art—Old Stove Plates. A Plan for Subscriptions to the Building Fund.

To the Editor of the *Intelligencer*:

Not a few citizens of Bucks county have patriotically felt it to be a part of their public duty to help the Bucks County Historical Society in its effort to instruct and honor the county. They have not waited for the general endorsement of public approval but have lent their willing hands when friends were few and continue to do so before success, as that word is generally understood, has been attained. Truly public spirited was the motive which induced Aaron Ball, of Quakertown, last week to present to the Society his valuable herbarium. A collection of plants representing the flora of Bucks county and covering the enthusiastic researches of several years. The specimens numbering several hundred are mounted on large sheets of thick paper with the latin names on the lower margin. Thus is material assistance given to the conception which has advocated a department of the Society to the hospitable entertainment and encouragement of the four or five enthusiasts in our county who for years have worked alone and without much outside sympathy in the ennobling study of flowers.

Through a similar act of spontaneous generosity a valuable and interesting relic of the early iron caster's skill, a work of art indeed, reached the society day before yesterday as a gift from the gentlemen composing the firm of Roberts, Winner & Co., of Quakertown. This is one of the stone plates made about 1750 by Richard Backhouse, of Durham, illustrating by its design the mediaeval parable beautifully perpetuated by the wood cuts of Hans Holbein, painted at Basel, and variously reproduced in old European art, known as the Dance of Death. Inheriting this artistic theme the German iron caster worked at Durham in the middle of the last century. In this case illustrating one of the forceful contrasts of his subject. The warrior knight seeking death hastens toward a skeleton who perversely turns away from the soldier to size the corpulent body of a his loving potentate, the latter in vain tries to drive back the king of terrors with a club.

These generous gifts express a spirit whose existence in the county inspires the friends of the society with hope. At last their dream of a suitable dwelling place for their collections, a rallying place for their effort seems within reach. To the long cherished proposal of a suitable building to be used as museum, laboratory, lecture room and place of study for all lovers of history in the county, several friends have within the last few days signed their names to a subscription list which starts out upon its quest with the sum of fifteen hundred dollars already subscribed. What finer ideal of the consummation of such a project than that this building should spring from the hearts of all the people and result from the contributions great or small of many rather than a few. As churches have been built through the slight subscriptions of many givers, so these walls might well rise upon the generosity of those who could not afford to give greater sums than twenty-five cents or one dollar. They all might have a share in a work by and for the county, and feel that the structure in whose foundation no false stone had been placed belonged to all, just as the collection representing Bucks county's past, (just gathered and shown) belongs to the hearts of all and expresses in a deep and true sense the life of every citizen of the county.

No excessive demand is made. Cooperation is the word. Help great or small according to the means of all. Any one may assist the Bucks County Historical Society with two or three hack fares. Scholars may help us with school contributions; we are working above all for them. We invite the friendly aid of the Teachers' Institute and teachers individually. Those who wish to contribute to the building fund are asked to consult either General W. W. H. Davis, the president, Alfred Paschall, the secretary, or Judge Yerkes, who has kindly drawn up the subscription request in legal form.

H. C. MERCER.
Lullum House, Oct. 25, 1897.

ARCHAEOLOGICAL RESEARCH.

To the Editor of the *Intelligencer*: Jan 20,

The recent article by Henry C. Mercer, under the above heading, was of a very interesting and important character, and deserves response. It will, I hope, attract attention throughout Bucks county.

The University of Pennsylvania, as represented in the association mentioned, is worthy of every confidence, and it may be taken for granted that such men as Dr. Joseph Leidy, Dr. Daniel G. Brinton and Dr. Charles C. Abbott will carry the undertaking forward to conspicuous success. A museum under the charge of such an association will be a worthy repository for pre-historic relics found in Bucks county. Such a museum would of course be permanently accessible to our people and to the public at large.

There could be no more feasible or more simple plan for the collection and proper care of Indian relics found in Bucks county than is offered in the article above referred to. Parties having such relics, or knowing of Indian camping or fishing grounds, would do well to communicate with Mr. Mercer, whose post office address is Doylestown.

It would be an excellent plan if Mr. Mercer would from time to time acknowledge in the two leading newspapers of the county the names of contributors, with a list of the articles contributed. This would help to stimulate collectors in the work and would aid in attracting public attention to the subject.

It is to be observed in handling relics are well timed, for every discovery must in these latter days be challenged from every standpoint of doubt; and just in proportion to the value of the relic will the criticism and scrutiny become. It is imperative that all finds be preserved in their original condition.

Hitherto the Indian fields and camping grounds of Bucks county have been searched by the collector of pretty relics rather than by the student of archaeology. The well-formed, perfect implements have been sought for, while the ruder ones have been overlooked. In this fact we have a vast opportunity for the student, for the neglected rude implements are quite as instructive as the better finished tools. In fact it is quite possible that they may reveal the history of an earlier race of aborigines.

As to possible caves in our part of the country Mr. Mercer's suggestion is quite worthy of attention. Such caves are possible in any limestone region. A small cave or pit was opened by workmen engaged in quarrying limestone in Montgomery county some years ago and some interesting remains were found, including the bones of animals long since extinct in North America. Discoveries of this kind are possible in the limestone of Durham, Buckingham, Solebury and Southampton. Bogs and deep swamps are also to be watched by the student, and when such places are crossed by ditches or excavations careful attention should be paid to the material brought to light. The swamps of New Jersey have yielded some very interesting remains, although for the most part belonging to a kindred branch of science, rather than to archaeology. Yet it is of no small consequence that archaeological students should pursue these researches in order that we may at length determine the era of man's advent upon the earth.

I hope that there will be a cordial response to Mr. Mercer's request for assistance. Young people, especially, would become greatly interested in the work of collecting material, and I am sure Mr. Mercer would gladly receive every contribution to the society's museum, however small that contribution might be, and that he would greatly appreciate any information tendered him relative to Indian camps, fields, paths, burial grounds or traditions.

S. EDWARD PASCHALL.

ARCHAEOLOGICAL RESEARCH.

To the Editor of the *Intelligencer*: Jan 17

It may interest many of the readers of the *INTELLIGENCER* to learn that not long ago the University of Pennsylvania established under its auspices an association for very extended instruction and research in archaeology, with Dr. Joseph Leidy as President, Dr. D. G. Brinton as director of exploration, and Dr. C. C. Abbott as curator of antiquities. Having for its object the study of those human remains which illustrate the history of man and the development of his arts upon the American Continent, it will begin its work with a series of expeditions, already partly organized, to explore the prehistoric mounds, canals and highways in Florida and the relic-bearing caves of the Bahamas, to search for possible traces of Asiatic immigration in Washington Territory and British Columbia, and prehistoric sites in Mexico and Arizona. It will examine the archaeological remains of Central America and Peru, and finally—to us the most interesting project of all—explore and study the Valley of the Delaware, "than which," as Dr. Charles C. Abbott says, "there is no more promising field on the North American Continent for the demonstration of the relationship of man to the great Ice Age, when slowly moving glaciers filled the upper Valley of the Delaware, and for an examination of the life of the Indian of history through the long period of his occupancy."

Was he, asks the archaeologist, ever distinctly a cave dweller like the ferocious hunter of prehistoric Europe, or always a maker of wigwams, and which of the great animals that roamed our primeval forests were his contemporaries? Did he avoid all less direct forms of manual labor, or, like his brother of Western Pennsylvania, was he a constructor of mounds, stone circles and rude fortifications? To pursue the study of these subjects the association proposes to make a map of Bucks county, marked with all possible sites for archaeological explorations, and to send its expeditions from time to time in search of the sites of villages, rock-shelters and caves, especially in limestone regions, whose entrances have been lost; to examine implements, whether of bone or stone; to study pictographs, if discovered, and to investigate stone circles, mounds and traces of camp fires. The objects thus found and information gained will form the basis of a collection of American antiquities, to be arranged in a handsome museum which the association eventually hopes to build in Philadelphia.

Furthermore, the association trusts that the work of the proposed expeditions will be helped by the farmers of Bucks county, who can assist it greatly in two ways: 1. By giving or selling the Indian antiquities they may possess to the museum. 2. By furnishing information that may be valuable in the making of the archaeological map.

Whoever knows by tradition or otherwise of the site of an Indian village, or has found a spot where relics are of frequent occurrence, whether in an open field, or by a spring or stream, whoever has seen an Indian grave, mound, or pot-hole, or knows of the whereabouts of a pictograph or carving, whether upon a cliff or implement of bone, clay or stone, or finally, whoever suspects the existence of a cave, through the falling in of earth, or drainage of water into a sink-hole or depression like the famous "Concave hole," in Buckingham, would greatly assist the association by communicating with the writer.

When a curious relic is ploughed up or found protruding from the ground, or when a sink-hole or aperture leading to a cave is discovered, one thing should above all be borne in mind, namely, that the position of the implement when found or the existing conditions of the soil about the cave's entrance, and the relation of the implements to each other within it, are facts of the utmost importance, on which may depend the discovery of fraud, the nature of an Indian burial, vexed points as to the use or age of the implements, and a dozen other questions. Yet these, let it be remembered, are conditions which only a trained eye can mark and appreciate, and to disturb which, since it may be impossible to reproduce them, may seriously affect the value of the discovery.

Stone implements should in no case be cleaned or washed; if seen protruding from the ground an important relic should if possible be left undisturbed, the spot having been marked with a stick, when by communicating with us an archaeologist can be on the spot in 48 hours. The entrance to a cave should be disturbed as little as possible, and least of all the surface of the ground or the prehistoric implements found in it.

H. C. MERCER.

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COPYING BUCKS COUNTY.

A Lecturer of the University of Pennsylvania Gets Ideas Here.

If the people of this county would like to be convinced that the Bucks County Historical Society is doing an important work they should read the announcements made in Philadelphia papers that the University of Pennsylvania is about to make a special collection of Colonial objects, some of which will be the subject of a lecture by Stewart Culin of the University. What the University contemplates doing is precisely what has already been accomplished in this county by Henry C. Mercer, member of the Historical Society.

Mr. Culin will lecture upon lamps. Everybody will remember Mr. Mercer's recent discourse upon the same subject before the Bucks County Society.

One of the Philadelphia papers says: "Mr. Culin may say in his lecture: This question of civilization is really a question of lights, and cheap kerosene oil has been a more potent factor than the printing press. Seems a tremendous assertion, doesn't it? But with hardly a second's thought anybody must admit that very little that is useful is accomplished in the dark. Man, it seems, doesn't become civilized until he has burned the mid night oil."

This is precisely the line of thought suggested by Mr. Mercer, therefore the work contemplated by this great University will really be an old story to the people of this county. This should convince every citizen of the county that the home society should be fostered and encouraged, and that it is time the society had a building of its own in which to preserve its valuable collections and continue its good work.

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DOYLESTOWN, BUCKS COUNTY, PA., MONDAY, JANUARY 24, 1898.

LIGHT AND FIREMAKING.

Flint and Steel—Lamps and Lanterns.

Extracts from An Address by Henry C. Mercer for the Bucks County Historical Society, at the Teachers' Institute, Doylestown, October 25; At the Franklin Institute, December 30, 1897, and at the Farmers' Institute, at Somerton, January 5, 1898.

The common kerosene lamp, with glass chimney suggests to us the important question of man's relation to light. It takes us back not farther than the middle of the last century, and recalls the story of that iridescent scum, on the surface of a stream near Pittsburg, which first soaked up upon blankets by Indians who wanted it as a lubricant, directing the petrolum hunter where to dig, and turned him rich in a night. To trace the story of lamps is to follow three lines of research, namely the fluid, the vessel holding the fluid and the wick. Cheap, brilliant volatile kerosene suddenly drove the old pewter spirit lamp, whether double or single tined like this here shown, off the field. First of all it traveled by ready absorption straight up the wick. The old sluggish animal oils crept up slowly and you had to lay your wick in them sideways, a fact which illustrates one of the great differences between old and new lamps, while we explain strange to say, that all lamps generally speaking older than the year 1830, are old. Some where about that interesting date human invention revolutionized lamps, as it revolutionized the products of other arts and crafts, so that back of this kerosene lamp of to-day, and without stopping to talk of electricity, we trace a series of rapid changes in lamps as far as the beginning of the century, until there inventive progress stops; things continue unchanged as you go backward to Roman and Egyptian times.

A lamp hunt in Bucks county garrets shows us the spirit lamp of our cradle days variously shaped for the world's use, often of pewter, burning a distilled turpentine called "spirit," through one or more narrow tubes from which dangle small extinguishers (in one instance a cock's spur (shown) on brass chains. Earlier as establishing the former glory of the New Bedford whale ship, comes a tin sperm oil burner (shown) set with a short wick and oil hole against the side, candle stick fashion, upon a tin pedestal, or the lard lamp of pewter (shown) where by means of the weight of a piston the lazy fat is driven up the perpendicular wick, or the flannel burning lard lamp (shown) where you can work the wick up or down the broad slot with a pin, to keep it soaked, and where the lard was kept liquid by a process of freezing and compression.

In and about these lamp last named, wherein animal fat was gradually superseded by a fluid that would climb a straight wick. The inventive genius of Argand, Leger, Carcel and Franchot, Young and Stobwasser played with wicks and currents of air in the beginning of the century in the old world.

Then we come to animal fat, and the lamps of bone, horn, stone, metal or earthenware, made to burn it, which retaining one and the same general form held sway as the world lamps of Christendom at least from Roman times until the dawn of our century.

The story of lamps from 1830 to Herodotus is not one of development. In principal form they remain the same, whether as the tin council, cups on candle sticks pedestals (shown), the round tin cups with hemispherical lids

relic of yesterday in Eastern Pennsylvania. Not long after the late war the country store, with factory-made candles of spermaceti and paraffine, ran the home made tallow product out of the market, while before that time a more primitive method, that of tipping, prevailed. You dip a suspended wick into a pot of hot tallow, on a cold day, repeating the operation until layer upon layer of grease hardens and until the old irregular tallow dip is produced, either hanging in batches of six or more on rods (shown), or as many a matron of Solebury and Buckingham remembers, thirty at a time on revolving discs. Who shall say, however, that candle tipping is older than moulding when we know according to the information of my friend, Mrs. Mary Clougherty, that they moulded candles in County Galway, Ireland, in late years, by punching holes in peat and pouring in tallow on the downhung wick. What more primitive method of candle-making can be imagined even in this ancient stronghold of Celtic life, where a moment's investigation of candles bring us to the most interesting of all candleless the rush light of Ireland, here shown, as, made by Mrs. Clougherty, in the style of the coastland, where the cliffs of Connemara frown upon the western ocean.

The bullrush pith dipped in suet rests in the notch of a wooden splint set in a block. Sometimes single, but sometimes in treble twist when the rush set ablaze (shown) flies apart, making a triple light, the general device has been reproduced in America by the Irish immigrants, while I have been pleased to trace it to the cabins of negroes in the vicinity of Charlottesville, Virginia.

No less surely must we look to the European for the presence among us of the beeswax candle, though I doubt whether the Indian has been credited for instructing the white pioneer in the art of boiling the berries of the candleberry myrtle, myrica cerifera, for a wax from which the beautiful perfumed green candles (here shown) were made for me recently by Miss Grant, of York Harbor, Maine. Just so similar candles have been made by our pioneers all along the Atlantic coast, and so this vegetable wax continues to be boiled in Central America, just as the Japanese peasants use these similar candles (presented me by Professor Wilson) made by them in like manner from the wax of *Rhus Succedanea*.

When Southern negroes go fishing at night with pine knot torches, or when our own farmers light the waters with alternate bands of low and pitch wrapped round a staff, they demonstrate the fact that a torch is only a large candle. I was able to prove, at Wyandotte Cave, in Indiana, that pieces of charred hickory bark scattered over the floor for a great distance were torches left by Indians and afterward to my surprise that Pennsylvania German settlers (doubtless instructed by Lenape Indians), had used similar torches (shown) called tuckles for night fishing. The Tennessee Indians used reeds, in Lookout Cave, as the Maya Indians, in Yucatan, carried burning cactus stalks into the great cavern of Loltun.

Lack of space prevents discussion of the interesting series of lanterns in the possession of the Bucks County Historical Society here shown from the glassless perforated tin cylinder steeped like the gable of a French chateau, by way of the various arrangements of tin and glass, candle and oil, to the store lantern of to-day, and much might be further said on the subject of aboriginal lights while the whole topic here most inadequately touched upon, suggests the prior consideration of how to get fire in the first place.

Who realizes that there were no striking matches at the dawn of the century? that you had to spin a wheel against jasper with a tiny string (shown), strike a piston in a cylinder to force heat out of compressed air, or open the upper and then the inner lid of a tin cup (shown) send a spark from an Indian arrow head struck on a circlet of steel upon scorched linen cloth, and blow tow or a sulphur match ablaze thereon for a light? How many centuries has life continued without matches just as at one time it was certainly without fire. The Eskimo made

(shown), or the lidless cups resting on wooden stands (shown), recently rescued by me from the rubbish garrets of old Bucks county. From the boat shaped earthen lamps of old Rome (shown), from the green majolica ones of candlestick shape (shown), used by the Moors of to-day, to their companion this miniature boatshaped one of stone-ware set upon a stemmed dish, in which opossum or coon fat might have burnt for the Tennessee Moonshiner, where I found it two years ago, in the Hill country of White county, Tennessee, there is no change of character or make. Neither are we presiding over the opening of an Etruscan tomb, when this pendant lard lamp of iron (shown), Museum Nos. 4, 6, 60, 69, 283, etc., comes to light. It is only an heirloom of the superannuated mills and workshops of Pennsylvania. Above all the American pioneers light, well adapted to catch the crevices of the log cabin with the double bar and hook and often hanging on the wooden trammels and cranes arranged against the walls or on pedestals to light the backwoods weaver or cobbler at his nightly task, or saw the eyesight of the open-fire cook of a century ago.

This hanging boat you follow for centuries in the old world to find it in brass (shown) in the junk shops of Amsterdam and the Hague, or of somewhat varied and rectangular shape (shown) in the Jewish synagogues of Morocco, in Majolica in Italy and attached to a pedestal (shown) with reduplicated wick tubes in Rome. The same idea invariably repeated in many countries and times holds its own from the dawn of history to the dawn of this century. The wick must lie sideways so that the fat can climb the easier. Hence the very frequent boat shape where the wick projects from the bow so to say, and hence the metal troughs tilted sideways in so many of these lamps on which the wick rests to be shoved up or down with pins.

As we follow the lamp back into the tombs of the old world, we find the boat shaped form of earthenware precede the boat shaped form of iron and possibly even that of bronze and while still noting this conformation of the receptacle to the needs of the wick we reach the beginning, permitting ourselves to fancy that the skulls of animals whose fat melted in the savage fire, or shells gathered on the strand were the oldest lamps of all. A glance at these oyster shells (shown) filled with lard and provided with wicks, by Virginian negroes, who use them as lamps to-day. Still further humor our fancy for this speculation, while with keenest interest we turn from fancy to fact in this chalk cup (shown in my model) perhaps the oldest wick floating lamp in the world, found by Carman Greenwell in a subterranean gallery of the Neolithic flint mines at Grimes graves, England, and hence older by some millenniums than the dawn of history.

The boat shape of the receptacle, the long duration of the animal fat and lastly the sudden development of invention in the nineteenth century are among the chief facts in the story of lamps, from the point of view of the history of oils and their receptacles, while the consideration of wicks composed of various vegetable fibers at various times presents us with an important subdivision of the question of artificial lights, namely into those wicked into soft fat lamps and those wicked in hard fat candles.

The tin three to twelve tubed mould (shown) down which you passed tallow on your stretched wick is a candle makers

fire by wood (shown) by the pump drill (shown) jasper and pyrites, the twirled stick (shown) and I have heard by sticks rubbed edge to edge while the Polanesian rubbed one stick diagonally against another (shown)

In all these operations they must work up a brown charred powder, make start holes and notches to concentrate the latter against the heat of friction, and catch and cherish the spark. If you want to test the difference of this process take one of these bow-drills or fire sticks and try to make fire for yourself. Toil as I have often toiled, break the bow string at the critical moment, blow away the dust and spark, upset the table, fall back exhausted; then confronted with a novel and strange difficulty, realize the importance to mankind the discovery of fire, a consideration that gives to these primitive tools a dignity that modern mechanism fails to outvie. What is your daily life without fire? What is steam and electricity, railway and ship, what is home and food without fire? Answer these questions and then regard if you may the inventions of modern times as of superior importance to fire, which is at the root of everything?

Who then discovered it, and how, and when? What suggested it? Dought the savage see it in the chafing of boughs of trees in the wind, or in the lightning's flash, in the ray focusing heat through transparent rock or in the outburst of the volcano?

Yet as sure as we are here, there was a time when man, ignorant of the art of fire, first discovered it; when jealous nature holding fast her secret in tightening grasp, and long swaying with the stress of struggle, at last yields to the force of human will and the naked toiler first becomes master of cold and darkness.

Doylestown Daily Intelligencer.

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DOYLESTOWN, BUCKS COUNTY, PA, MONDAY, JANUARY 24, 1898.

PRICE,

LIGHT AND FIREMAKING.

Flint and Steel—Lamps and Lanterns.

Extracts from An Address by Henry C. Mercer for the Bucks County Historical Society, at the Teachers' Institute, Doylestown, October 25; At the Franklin Institute, December 3d, 1897, and at the Farmers' Institute, at Somerton, January 5, 1898.

The common kerosene lamp, with glass chimney suggests to us the important question of man's relation to light. It takes us back not farther than the middle of the last century, and recalls the story of that iridescent scum, on the surface of a stream near Pittsburg, which first soaked up upon blankets by Indians who wanted it as a lubricant, directing the petroleum hunter where to dig, and turned him rich in a night. To trace the story of lamps is to follow three lines of research, namely the fluid, the vessel holding the fluid and the wick. Cheap, brilliant volatile kerosene suddenly drove the old pewter spirit lamp, whether double or single tubed like this here shown, off the field. First of all it traveled by ready absorption straight up the wick. The old sluggish animal oils crept up slowly and you had to lay your wick in them sideways, a fact which illustrates one of the great differences between old and new lamps, while we explain strange to say, that all lamps generally speaking older than the year 1830, are old. Some where about that interesting date human invention revolutionized lamps, as it revolutionized the products of other arts and crafts, so that back of this kerosene lamp of to-day, and without stopping to talk of electricity, we trace a series of rapid changes in lamps as far as the beginning of the century, until there inventive progress stops; things continue unchanged as you go backward to Roman and Egyptian times.

A lamp hunt in Bucks county

relic of yesterday in Eastern Pennsylvania. Not long after the late war the country store, with factory-made candles of spermacetti and paraffine, ran the home made tallow product out of the market, while before that time a more primitive method, that of dipping, prevailed. You dip a suspended wick into a pot of hot

tallow, on a cold day, repeating the operation until layer upon layer of grease hardens and until the old irregular tallow dip is produced, either hanging in batches of six or more on rods (shown), or as many a matron of Solebury and Buckingham remembers, thirty at a time on revolving discs. Who shall say, however, that candle dipping is older than moulding when we know according to the information of my friend, Mrs. Mary Clougherty, that they moulded candles in County Galway, Ireland, in late years, by punching holes in peat and pouring in tallow on the downing wick. What more primitive method of candle-making can be imagined even in this ancient stronghold of Celtic life, where a moment's investigation of candles bring us to the most interesting of all candleless the rush light of Ireland, here shown, as made by Mrs. Clougherty, in the style of the coastland, where the cliffs of Connemara frown upon the western ocean.

The bullrush pith dipped in suet rests in the notch of a wooden splint set in a block. Sometimes single, but sometimes in triple twist when the rush set ablaze (shown) flies apart, making a triple light, the general device has been reproduced in America by the Irish immigrants, while I have been pleased to trace it to the cabins of negroes in the vicinity of Charlottesville, Virginia.

No less surely must we look to the European for the presence among us of the beeswax candle, though I doubt whether the Indian has been credited for instructing the white pioneer in the art of boiling the berries of the candleberry myrtle, myrica cerifera, for a wax from which the beautiful perfumed green candles (here shown) were made for me recently by Miss Grant, of York Harbor, Maine. Just so similar candles have been made by our pioneers all along the Atlantic coast, and so this vegetable wax continues to be boiled in Central America, just as the Japanese peasants use these similar candles (presented me by Professor Wilson) made by them in like manner from the wax of Rhus Succedanea.

When Southern negroes go fishing at night with pine knot torches, or when our own farmers light the torches,

Wanamaker's

Wanamaker's

IN THE CHURCHES.

Tried Many

PHILADELPHIA, Monday, January 24 1898

shows us the spirit lamp of our cradle days variously shaped for the world's use, often of pewter, burning a distilled turpentine called "spirit," through one or more narrow tubes from which dangle small extinguishers (in one instance a cock's spur (shown) on brass chains. Earlier as establishing the former glory of the New Bedford whale ship, comes a tin sperm oil burner (shown) set with a short wick and oil hole against the side, candle stick fashion, upon a tin pedestal, or the lard lamp of pewter (shown) where by means of the weight of a piston the lazy fat is driven up the perpendicular wick, or the flannel burning lard lamp (shown) where you can work the wick up or down the broad slot with a pin, to keep it soaked, and where the lard was kept liquid by a process of freezing and compression.

In and about these lamp last named, wherein animal fat was gradually superceded by a fluid that would climb a straight wick. The inventive genius of Argand, Leger, Carcel and Franchot, Young and Stobwasser played with wicks and currents of air in the beginning of the century in the old world.

Then we come to animal fat, and the lamps of bone, horn, stone, metal or earthenware, made to burn it, which retaining one and the same general form held sway as the world lamps of christendom at least from Roman times until the dawn of our century.

The story of lamps from 1830 to Herodotus is not one of development. In principal form they remain the same, whether as the tin council, cups on candle sticks pedestals (shown), the round tin cups with hemispherical lids (shown), or the lidless cups resting on wooden stands (shown), recently rescued by me from the rubbish garrets of old Bucks county. From the boat shaped earthen lamps of old Rome (shown), from the green majolica ones of candlestick shape (shown), used by the Moors of to-day, to their companion this miniature boatshaped one of stone-ware set upon a stemmed dish, in which opossum or coon fat might have burnt for the Tennessee Moonshiner, where I found it two years ago, in the Hill country of White county, Tennessee, there is no change of character or make. Neither are we presiding over the opening of an Etruscan tomb, when this pendant lard lamp of iron (shown), Museum Nos. 4, 6, 60, 69, 283, etc., comes to light. It is only an heirloom of the superannuated mills and workshops of Pennsylvania.

From all the American pioneers light,

alternate bands of tow and pitch wrapped round a staff, they demonstrate the fact that a torch is only a large candle. I was able to prove, at Wyandotte Cave, in Indiana, that pieces of charred hickory bark scattered over the floor for a great distance were torches left by Indians and afterward to my surprise that Pennsylvania German settlers (doubtless instructed by Lenape Indians), had used similar torches (shown) called fockles for night fishing. The Tennessee Indians used reeds, in Lookout Cave, as the Maya Indians, in Yucatan, carried burning cactus stalks into the great cavern of Loltun.

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Who realizes that there were no striking matches at the dawn of the century? that you had to spin a wheel against jasper, or that you had to strike a flint against a piston in a cylinder to force heat out on compressed air, or open the upper and then the inner lid of a tin cup (shown) send a spark from an Indian arrow head struck on a circlet of steel upon scorched linen cloth, and blow tow or a sulphur match ablaze thereon for a light? How many centuries has life continued without matches just as at one time it was certainly without fire. The Eskimo made fire by wood friction and a bow drill (shown), other North American Indians by the pump drill (shown) jasper and pyrites, the twirled stick (shown) and I have heard by sticks rubbed edge to edge while the Polanesian rubbed one stick diagonally against another (shown).

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