

Accidents That Made History

"A burning haystack was responsible for starting me on my running career." So declared Alfred Shrubbs, the world-famous runner.

Apart from sport, many things of the greatest service to mankind have been discovered by accident. The rubbing of a piece of amber "evoked," to use Faraday's words, "an invisible agent which has done for mankind far more wonderful things than the genie of Aladdin did or could have done for him"; the up-forcing of the lid of a kettle discovered the marvelous power of steam, and the falling of an apple demonstrated the law of natural attraction. The swinging to and fro of a suspended lamp gave birth to the application of the pendulum, to which the precision of modern astronomy owes so much.

The manufacture of gunpowder was discovered by accident. An Augustinian monk, Berthold Schwartz, having put a composition of sulphur and saltpetre in a mortar, it took fire, and the stone that covered it was blown off with great violence. The accident led the chemist to think that it might be used to advantage in attacking fortified places.

Seen in a Dream.

Leaden shot is attributed to a Bristol plumber who, in 1783, dreamed that he was out in a shower of molten lead which fell in the form of spherical drops. His curiosity being aroused, he went next day to the top of a church and poured some molten lead into a vessel of water lying below.

To his great delight, he found that the lead had gathered into globular balls, and at once he took out a patent.

One day, about three hundred years ago, a poor optician was working in his shop in the town of Middleburg, in the Netherlands, when his little girl,

who was amusing herself with the objects lying about, exclaimed, "Oh, see how near the steeple comes!"

She was looking through two lenses, one held close to her eye, the other at arm's length, one being convex, the other concave. The optician saw in this a wonderful discovery, and he set about making use of his new knowledge of lenses. In this way the telescope was invented.

Röntgen's Rays.

The discovery of saccharine, that sweetening agent so much used as a substitute for sugar during the war, reads like a romance.

Dr. Fahlberg had entered the Johns Hopkins University in America to study the chemistry of coal-tar derivatives. After some months he noticed an intensely sweet flavor upon his bread and butter. He traced the sweetness to his hands and his coat-sleeves and it dawned upon him that it must have been derived from one of the new compounds he had succeeded in producing.

He hurried back to his laboratory and tasted the contents of every vessel with which he had been working. One of the beakers contained saccharine, a substance whose sweetness is three hundred times greater than that of cane sugar.

Professor Röntgen came upon his marvellous X-rays quite by chance. He was experimenting in the dark with a Crookes vacuum tube, which was covered with some sort of cloth. A strong electric current was passing through it, while close by was some prepared photographic paper, but no camera. Next day he noticed several lines on this paper. By restoring everything to exactly the same condition as on the preceding day, he was able to ascertain the real origin of these mysterious marks.

JED CARTER, OF SHADOW DELL FARM

By William Johnson

I should like to have seen what some great fictionist would have done with Jed Carter. Here in our quiet little neighborhood, Jed has lived a story that thrilled every one of us. He is a dark, lean, silent man of about thirty-seven, with a reputation, years back, of permanently retiring from circulation ninety-five cents of every dollar he got.

Twelve years ago Jed bought a hundred acres of swamp and hills that no one else wanted. He has made as pretty a little farm out of it as a real-estate dealer would want to picture on the cover of his catalogue. Work seemed to be the only thing Jed knew. They say he wore out an alarm clock and two lanterns every six months, clearing up that farm, but in nine years he did a magnificent job.

I drove by with Uncle Dave Dayton the day Jed nailed the name he had given his farm over the arched gateway opening on to the curved, cedar-bordered drive. Shadow Dell, it read, and neither of us could have been more surprised if it had been an announcement of a free chicken dinner to the entire neighborhood. We hadn't thought that there was a streak of sentiment that size in Jed's iron make-up.

"Now, I wonder who he'll marry," Uncle Dave said. He was driving with one hand while he stroked his pointed silver beard with the other, and thinking so intently that he absent-mindedly stepped on the accelerator instead of the brake, nearly running the car into a ditch.

"You've got a lot of faith in signs," I laughed, when we were once more skimming safely down a smooth stretch of macadam. "Jed wouldn't consider anything but an heiress, which Bay Port hasn't got."

"Don't you fool yourself," Uncle Dave said. "Jed isn't a miser. He's just a one-idea man. He goes after one thing at a time, like that farm, with all there is in him. He's ready for a mate now, and it'll be the same way. That little chap with the bow has arrows with special long points on 'em for Jed's sort."

It turned out much as Uncle Dave said. Dora Loring came to teach our school that fall, and from the beginning it was plain to see that she was the centre of the universe to Jed. What is more, a half-dozen other

young and old Bay Port bachelors were full of the same idea.

Dora had the time of her merry young life. Wherever she wanted to go she had the pick of every sort of conveyance from Hank Newberry's spavined old sorrel and buckboard to Jed Carter's shiny new "six." And she was as likely to take one as the other. She played her suitors pretty evenly, though we did think Jed was a little in the lead. We could never be sure, for Dora was one of those golden-headed, laughing little witches that a man can understand about as he can gather up a bucket of moonlight.

Jed followed her around at parties and picnics, looking as mournful as an orphan lamb on a windy hillside. Sometimes it is funny, but always it is pathetic to see a big, strong man who would stand a good show in a bare-handed fight with a wild cat made practically useless by a little mite of a woman. It lasted during the entire school term, then, woman-like, Dora ignored all the farms and fine houses laid at her feet, and married George Hess, the fat, bald, pug-nosed, poverty-stricken freight agent in town. I don't pretend to know why to any further extent than that she and Jed had a passing quarrel, and that George could make a violin laugh and cry.

Except for the night the engagement was announced you couldn't see much change in Jed. Maybe he was a little sadder than before and worked harder, but he could scarcely have beaten his previous records in either way enough to be noticeable.

The announcement came as a surprise at a party the Ellisons gave, which was where Dora boarded. Jed was among the first to congratulate the smiling, flustered pair, but I didn't hear what he said. I only saw the corners of his mouth twitching, his big hands fumbling with his vest front and the sham of a smile he managed to hide his hurt behind.

I thought of him going back to his little house and finding a silence as of death in its still rooms. In his dreams it had been a home, warm and glowing with such pictures as only the love of a clean man for a good woman can paint. And now it was just walls and a roof, and the man was standing there with that desolation in his heart, hiding it with the little pretense he knew. It is the heritage of the country—that stolid power learned from frost and flood and drought—to take your pain calmly, as it comes.

"Words won't help him," said Uncle Dave when he and I sat out on the porch a little later. "They never do help much. Every man has his own

—and the worst is yet to come



sources of strength and comfort, and he's got to go to his own when the great need comes. Jed'll find his in the everlasting things he's lived with. They're full of healing."

A year later George Hess took sick with some obscure malady that the doctors said could only be cured by an expensive operation and a rest in a warm climate. Neither George's folks nor Dora's had any money, and no way to borrow the thousand dollars that would be needed. While we were talking the dreary situation over, a joyfully surprising thing happened.

One of the great surgeons from a hospital in a nearby city came to Bay Port, explained that he had heard of George's sickness through a patient from the next town, and that as the malady was a rare one he would be glad to perform the operation for no other pay than the scientific pleasure it would give him. He would even bear the expense of the Southern trip—that being necessary to complete the cure—and it could be repaid later.

Of course the offer was accepted, and we waited anxiously for news of the outcome.

It was six weeks later when we got word from a seaport village in Jamaica. It came to Uncle Dave, as it naturally would. Just a six-word telegram, which happened to arrive one evening when he and I were in the post office.

George died this morning, coming home.

Dora. Uncle Dave crumpled the yellow sheet that carries so much of pain and joy, and seemed to be looking at something a thousand miles away.

"I wonder how anyone can ever lose faith in life," he said. "What queer, round-about ways it takes."

More than a little puzzled, I asked him what he meant.

"Didn't you know that Jed Carter went to the city about a week before that surgeon came?" he demanded. "Didn't I tell you he had mortgaged his place for a thousand dollars? Can't you see Providence helping Cupid to straighten out a tangle for a real man in all this?"

Of course I could after I'd got through gasping and marveling. How little would the keenest observer have suspected that close, silent man of such a sacrifice! His toil freely given to another who had stepped between him and his happiness, for the sake of the woman who would not have him.

By little the story leaked out, and when, a year later, Jed and Dora were married, I don't believe that Bay Port ever dressed up and forgot its work for a day, and had a better time. Such a wealth of presents was never before showered on a happier pair.

Just before Uncle Dave got into his car to drive them to the station he turned to me and said:

"You go out to Jed's place, John, and take down that name over the gate. Put up the one you'll find in my granary. It's 'Sunshine,' not 'Shadow Dell.'"

A Maxim of the Woods.

The hunting season is at hand, and therefore it is time to recall the old maxim of the woods, "If you get lost, stay put." A night in the open and twenty-four hours without food need not hurt anyone if he does not use all his energy in futile wandering and shouting. The most conspicuous spot available suggests itself as the place to camp, and common sense directs a little smoky fire to guide the inevitable searchers. There is no need to worry; if you follow nothing but the rule you cannot be lost long, and your rescuers will not have to run down a wild man at the finish.

A Master Hand.

Dora—"Do you know, George proposed to me last night."

Flora—"Yes, doesn't he do it beautifully?"

Bed-springs coated with aluminum paint will not rust.

ENGLISH ESTATES UNDER HAMMER

LARGE HOLDINGS NOW BEING DIVIDED.

Ever Increasing Taxes, War Ruined Families and Demand for Farm Lands.

Despite all the "stately homes of England" that have passed under the hammer within the last few months and despite the daily page and more of the Times advertising further splendid properties for sale, by far the bulk of the estates, great and small, will remain in the hands of the original owners.

Up to fifty years ago 2,000 persons owned half the agricultural land of England and Wales. Heavy as have been the sales, past and to come, they make no serious dent in the ranks of these great, property-owning classes. In Scotland a Parliamentary committee reported only the other day that nearly a fifth of the country's total area was reserved in deer forests.

There can be no doubt, however, that the sales have been heavy and estates of supreme historic and artistic interest have recently passed into new hands. They have passed into the hands of three classes: People of recent wealth, like Lord Leverhulme and Lord Beatty, institutions and hotels and the housebreaker and lot seller.

Pleasure Lodges Go First.

The toll has been the heaviest in the medium sized establishments. That means places used primarily for pleasure. They have had large houses and relatively small amounts of agricultural land. In estates where the agricultural land ran into thousands of acres sales of part of the land enabled proprietors to hold onto the most valuable sections, with their mansions, in the face of rising costs and taxes. Medium sized places have had to go entire.

When "the stately homes of England" changed hands in the Middle Ages it was often by royal grant or forfeiture, and the holder literally lost his head under the axe of the executioner at the same time. To-day when he loses his ancestral home under the hammer of the auctioneer he does not lose his head, literally or figuratively, but re-invests the purchase money in what are called "gilt edged securities," and rejoices at his release from the burdens of landlordism.

The great country mansions are expensive to maintain, and their accommodation is in excess of what all but the wealthiest and most opulent demand. At the same time, by buying them or renting them, it has been well said that a man "may enter into the heritage of centuries." At one bound he becomes a person of weight throughout a district, and may hope to assume various interesting and honorific offices, some of which, such as the position of High Sheriff, are not coveted by men of restricted means.

A wonderful range of sport awaits him—hunting, shooting, fishing and golf, and if he is a social individual he will find plenty of friends, men of affairs or plain country gentlemen, according to his tastes, who will welcome him to their houses and be glad to enjoy his hospitality in turn. An illimitable range of interests opens to him, and we have personally known many men who went as total strangers to a county, but who soon became known and liked and a power in their adopted district. Privileges of no mean order may, in short, be enjoyed by a man who can afford to rent or buy an English country seat, and the cost is not prohibitive.

Historic Homes to Let.

Scores of historic houses may now be taken at a moderate rental, inclusive in many cases of the magnificent



INSPECT THE STEERING APPARATUS

Suppose it should break—the steering apparatus of an automobile going at even ordinary speed? One needs to have no very vivid imagination to picture the possibilities of disaster. The thought brings up visions of a car making wreckage out of itself and everything in its path, plus horrible human suffering. A broken steering apparatus leaves the driver in a more helpless position than the collapse of almost any other part of the machine. When a motorist thinks of running without the steering rod he pictures wheels trying to go in divergent directions, with his ultimate destination the ditch. As a matter of fact, it is possible to run a considerable distance at moderate speed with only one wheel connected to the steering apparatus, as experiments have demonstrated.

The front wheels of an automobile also have other peculiarities not usually understood by the amateur driver. For instance, most people think that the front wheels of an auto should be perfectly true in every way; that is, that they should run exactly parallel. But they do not run parallel from any viewpoint. The front wheels actually toe in to a slight degree; that is, the distance between the front part of the wheels should be one-quarter to three-eighths of an inch less than the distance measured between the back parts.

Variations Necessary.

Theoretically there would be a wear on the tires if they were at all out of true, but when it comes to the practical consideration of an auto there are certain variations of this which are necessary to make the operation of the car safe and a matter of ease.

Of course, there cannot be too great a difference in the alignment, but a very slight difference is necessary to enable the steering to be a matter of certainty. There will be an intangible amount of extra wear, but it does not cut any particular figure in the life of the tire and it gives a stability to the steering which cannot be neglected.

This principle can be illustrated by referring to two types of boats which are familiar to most folks. One is the scow with the square nose, which is very hard to steer either with or against the tide. It is pushing flat against the water and there is no lateral pressure to keep it steady. The pointed bow boat, the ordinary type, has a pressure on each bow so that

there is a constant resistance against any extraordinary pressure from either direction.

This makes it necessary in steering to exert a certain pressure to turn the boat about. In actual practice it keeps the boat from wobbling. The same principle applies to the front wheels of an automobile. If they are perfectly aligned there will be no tendency to give one way more than another and very little pressure would tend to turn the wheels aside and make the car wobble. Experience teaches that this actually occurs.

Keeps Car Steady.

If the wheels toe in a little there is exactly the same pressure effect working from opposite directions. Each seeks to go slightly out of true and each offsets that tendency in the other. This naturally keeps the car steady and the wheels pass over slight obstructions without turning them in the slightest degree. Only a rut or some large obstruction would cause them to turn, and this would be the case under all circumstances.

In case there is wear due to neglected lubrication or otherwise, the wobbling tendency is especially noticeable.

Sometimes the pins are inclined fore and aft; that is, the bottom is further forward than the top. This is to help the wheels pointed straight ahead, making the wheels into a sort of caster, that they trail easily. The knuckles are directly over the centres of the wheels and the line of weight would be directly downward, but the pins point forward. In this way the line of weight is moved forward and the weight is carried ahead of the contact point of the tire with the ground. The pressure exerted on the knuckle pins keeps them firmly in place, even though there be considerable wear. The pressure being from both sides, it naturally takes up the play in both knuckles the same as with a chain when it is drawn tight.

It is tremendously important that automobile owners have the steering apparatus regularly inspected to see that the pins are kept tight and that the wheels do not get too much out of alignment. The pin might drop out when going down a steep hill, or when running at high speed. And there is extra wear on tires when the wheels are not properly set. And there is, of course, great possibility of disaster when anything happens to the steering parts of an automobile. These parts represent a consideration of serious importance.

antique and other furniture with which so many old mansions are enriched. Sometimes a tenancy is granted with an option to purchase, and in the case of one well known seat, Ragley Hall, Warwickshire, it has just been announced that a nominal rental would be accepted from anyone willing to expend money on the house.

In the same county is a castle, Maxstoke, of early mediæval date, which can be rented for a few pounds a week. There are castles—real baronial strongholds and once royal palaces—with a teeming wealth of history, and every modern luxury of equipment, to be had for a few hundreds a year. The owners cannot keep them for their own occupation and prefer to let them at a low rent rather than see them empty and neglected. That, then, is one way in which the great houses of England are dealt with. There are others, chiefly conversion to institutional uses, such as schools and sanatoria; and, happily, still infrequent, demolition and sale as building material.

Of great houses that have been converted to institutional purposes in the last few weeks or months only a few can be mentioned. A Berkshire mansion has been made into an orphanage; another in Bucks into a training home for London deaf children; Bedgebury, a palatial mansion on the Kent and Sussex borders, has become a boarding school for girls; Deepdene, a famous Surrey seat, has just been turned into a hotel; Cefn Mablys, most historic of South Wales mansions, is to be a convalescent home for the workers of a Cardiff firm, and the late Mme. Patti's South Wales castle, Craig-y-Nos, has been bought for

version into a sanatorium, and so with many others.

The Hay-Fever Weeds.

Let none infer, however, from the recital of the extent to which England is changing hands that everything is in the melting pot socially. It is not, and despite the vast number of famous and ancient estates in the market there remain yet more that are still owned and occupied by the bearers of the names that have been associated with them for generations. So long as they can continue their connection with the properties so long will the ownership of the great English domains have amenities such as money alone is powerless to provide.

Some drink so many healths that they drink away their own.

Diplomacy Needed to Build Pole Line

Lack of understanding rather than maliciousness lies at the bottom of many international difficulties. Especially is this true in the dealings of a civilized with an uncivilized people. So apart are the ranges of experiences that a mutual ground of apprehension is hard to find. One no longer wonders at the reluctance of the Asiatic tribe to allow the telegraph to pass through its country when he reads of the true reason of the native's refusal.

The company, surveying the ground for the telegraph, wished to bargain with the Lamuts for deer to be used in the construction of the line. The chiefs received the agents with great dignity, and gravely listened to their proposals. Then they announced that they had plenty of reindeer and were perfectly willing to sell them for any other purpose, but not for the building of the telegraph.

Thinking that they did not under-

stand the nature of the line and its objects the agents carefully explained, telling the chiefs it consisted simply in a series of poles extending through the country, with a small wire stretched along the tops. They enlarged on what advantage the natives would gain from the forts and stations established along the way, from which they could obtain supplies and clothes.

The agents were puzzled, not being able to imagine why they were so opposed, when one Lamut, as if struck by a new idea, asked how far apart the poles would be placed. When this point was made clear, all faces brightened.

They knew that the line of telegraph would cross their usual routes of travel, and they had supposed that the poles would be so close together that they could not pass between them with their deer. This difficulty disposed of, they immediately promised to furnish two hundred deer.