THE FALL OF SUMTER

whom the fort was named in 1833, was a private in the Palmetto Guards; ex-Governor John L. Manning, grandson of one of the conspicuous heroes of Eutaw, was also a private. The venerable Edmund Ruffin, of Virginia, 74 years of age, was a private, and having traveled all the way from Virginia for the purpose, was allowed to fire the first shot against Fort Sumter from what is known as the iron battery.

Fires were kept blazing in Charleston harbor during the night for the purpose of detecting the numches of the distant fleet, if an attempt should be made to relieve the garrison.

When the First Gun Roared People Rushed From Their Bouses Half Dressed to See the Fight.

BEAUREGARD SOON GREW POPULAR.

How the Fine Wines Flowed When Gallant Major Anderson Took His Men Away.

WRITTEN FOR THE DISPATCH. Thirty-one years ago next Tuesday the first gun sounded the prelude to the great war drama, the curtain of which fell four years afterward on the dead bodies of nearly a million of the actors and a loss of biltions of dollars.

The echo of the last stroke of 4 from the historic chimes of St. Michael's had scarcely died away, when a group of soldiers gathered around a mortar in Fort Johnson, Charleston harbor, and waited, watch in hand, for the moment when the signal should sound the toesin of civil war and the death knell of 80 years of peace. A half our later, obedient to the orders from General Beauregard, followed a flash of light, the thunder of a gun and an 11-inch shell traced its pathway toward Fort Sumter with a long, thin line of fire. Another quickly succeeded, and the chorus of battle began. The first of these shells was fired by Captain George S. James, the second by Lieutenant Hampton Gibbes. Among the officers in the mortar battery were Colonel James H. Chestnut, ex-United States Senator, Capmin Stephen D. Lee, subsequently a Lieutenant General, and Colonel Alexander R. Chisolm. These officers were the aides of General Beauregard, by whom his final note to Major Anderson had been conveyed to

People Rushed Out Half-Dressed, No pen, tongue or canvas can accurately portray the scenes of that April morning n the city of Charleston, when its in-



by the first guns. Lights flashed, as if y magic, from the windows of every sgitated mass of people were rushing toward the water fronts of the city. Grave citizens, usually distinguished by their disputs housed the water fronts of the city. dignity, hurried along the streets, dressing while they ran and madly shouting hurrahs. There were men without coats, women without hats and children in their nightgowns, all hastening to the same point

The fashionable promenade, known as The fashionable promenade, known as great daring. At the reappearance of the "The Battery," presented a conglomera-flag the boat with the sides of Beauregard tion of persons in dishabille, who, at any other time, would not have thought of violating the social conventionalities of attire. And there, with plea faces and eyes sharpened by the strange fascination of the scene, the multitude remained hour after hour, peering into the darkness and watching the progress of the fight by the flashing of the guns.

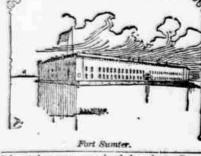
white managed to Fort Sumter. Being conducted to Major Anderson he compliflashing of the guns.

In a few minutes all the batteries that

environed Fort Sumter had opened fire, or, to use the words of General Ripley, then commanding on one of the islands, "rung their breakfast bell for Major Anderson,' but it was two hours before the latter re-Hardly, however, had objects of the low

become well defined among the -hadows of the morning, wheh as if wrath. al from enforced delay, there suddenly poured from the parapet and casemates of mor instantly ran through the city, "Fort Samter has opened fire." The battle now raged with fury, and the fiery messengers from both sides followed each other with arriteful haste.

Beauregard Was Soon Popular ort, sharp spurts of flame told of burst ing shells in and around the beleaguere the Stars and Stripes to be found on the soil of South Carolina, while splashes of spray or clouds of crumbled brick marked he ugly force of round shot striking its face.



Disputches were received hourly by Beauregard, the commander in chief, and com municated to the people by bulletins. At first the proud Carolinians were inclined to rebel at the authority of a strange commander, but there was something well-defined physiognomy, the dark eye, firm lip and massive chin of the great creole told of hidden power and inspired confidence, and it was not long before the here of Contreras and Churobosco was enthroned in the hearts of the people.

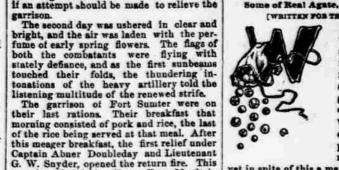
A curious blending of humanity was to be hearved among those who manned the Confederate fortifications. In their shirt sleeves, with heads bare and features smokebegrimed, working heavy guns, were the ctore at the Charleston Club, elegant types of wealth and lessure. Here was a clergy-man and some of his deacons, there a bank president and clerks, and yonder a group of planters who could give you more points on the age and quality of fine wine than on military tactics. Many of these gentlemen never had heard a shotted gun before that day, and yet, with a mixture of chivalry d recklessness, would spring to the cres of the earthworks after each fire to watch Major Anderson as his answering missile came shricking back. The aggregated wealth of the companies might have been counted by millions, and the old historic names of the State, Rutledge, Ravenel, Pinckney, Lawrens, Huger, Rhett, Calhoun, Middleton, Manigault, Hampton, Prestor

some of the Famous Privates. "the gamecock of the Revolution," after | into a solid mass.

BOYS

HOW MARBLES ARE MADE.

All the Pretty Little Globes Come From Germany-Peasants Grind Them by Foot Power-Secret of Colored Glass-Some of Real Agate, [WRITTEN FOR THE DISPATCH.



G. W. Snyder, opened the return fire. This was about 7 o'clock. From Fort Moultrie

General Ripley was throwing hot shot, and about 8 a tall, steadily ascending column of

smoke was observable on the southern por-

tion of Sumter. First it was thin and pale,

but every moment it grew darker until, shooting out from the base of the black pil-lar, great yellow tongues of flame could be seen lapping the tops of the barracks and officers' quarters.

The War Vessels Wouldn't Move.

The first impression was that Major Anderson was signaling the fleet, consisting of eight war vessels and 1,380 men, which had been sent to the rescue, but had remained idly at anchor and made no sign of help. At 10 o'clock the fire reached a magazine of

shells and grenades and a terrific explosion ensued that caused many a heart to stand still, for the men in that beleaguered and burning fort had many friends in Charles-

ton who were watching it with keenest in-terest. When the explosion occurred a

young girl who was present with a party of her schoolmates was seen to throw her arms wildly in the air aud exclaim, "Oh, God, my brother!" She was the sister of Lieu-

tenant Jeff C. Davis, one of Major Ander-

son's officers, who afterward became a Union General.

Three times the flag was lowered as a sig-

nal of distress to the Federal fleet in the offing, but no response followed, and it was left to Beauregard to tender the merciful

Gallantly Replaced the Fing.

At 1 o'clock a shot from Sullivan's Island

severed the flagstaff and brought down the

Stars and Stripes. They were replaced, however, in about 15 minutes by Private

Hart, of New York, under circumstances of

who had been sent to offer assistance turned

back, but immediately ex-Senator Wigfall

of Texas, a voluntary side of Beaurege accompanied by Private Gourdin, of the Palmetto Guard, pushed off from Morris Island in a small boat, and, showing a white handkerchief on the point of his

mented that officer on his gallant defence

and stated that to continue the conflict under the circumstances would be to un-

necessarily risk the lives of the men under

his command without commensurate results.

Colonel Wigfall said that the troops would

cease firing as soon as the flag was lowered,

and he offered the terms of surrender already

"Then," said Major Anderson, "I must

surrender; I have no other resource; we are all in flames, and my men will shortly suf-

Accordingly, at 1:05 o'clock on the 13th of April the Stars and Stripes were lowered, firing ceased, and Fort Sumter virtually

passed into the possession of the Southern

The appearance of the fort at the time

defies description. At every turn the eye rested upon ruin. Fort Moultrie also bore

by the Federal artillerists. It was here that

aptain John Mitchell, Jr., son of the Irish

patriot, first distinguished himself as an

all this exchange of iron compliments, not a single life was lost.

A Great Day in Charleston.

The evacuation of Fort Sumter took place

about noon on Sunday, April 14, and the

garrison took its departure on the steamship

Isabel. Dressed in full uniform and wear-ing their side arms, they marched out to the tune of "Yankee Doodle." Major Ander-

son looked careworn and despondent. He was a fine specimen of an American officer

ripient of Charleston's choicest hospitality.

The flag had been saluted by the discharge

of 55 guns. A gentleman standing near Major Anderson asked if 34, the usual number, was not sufficient. "No," replied the old soldier, bursting into tears, "it should be 100, and that is not enough."

As the steamer moved off cheer after

cheer rent the air. Every available site

along the coast and in the city was occupied,

and every conceivable species of water craft

had its full complement of guests. The strictest churchmen forgot their afternoon services and watched and shouted with the

maidens, young men and children hurrahed

until they were hoarse. People stopped and shook hands that day who had hever be

fore exchanged civilities, and fine wines were drunk at clubs and dinners that for

more than a century had been in sacre

keeping for no other purpose than to fitly celebrate a great epoch. So ended the first and only bloodless battle of the great Civil

If a single hair of wool be examined

through a microscope it will be seen to con

sist of a central stock, with apparently a

large number of branches starting from it

in every direction. It is this peculiarity of wool which renders it so valuable in mak-

gether and pressed with the hands the

branches interlock in such a way that with

MRS. F. G. DE FONTAINE

isiest of worldlings, while old men and

e of the careful attention paid to it

Strange to say, notwithstanding

submitted by Benuregard.

Jocate.

Confederacy.

HAT becomes of all the marbles? There are 1,000,000,000 marbles brought from Germany and sold to the boys and girls of this country every year. That would give every child of the marbleplaying age about 50 marbles a year, and

yet in spite of this a marble two seasons old is not common, and one that dates back four years is old enough to pass as an antique, and is kept by its owner "for luck," like Continental dimes, Peter Barlow knives and

relics of by-gone days.

No one can tell you what becomes of the marbles, but I can tell you how marbles are made. They are all made in Germany, and marble grinding, molding, glazing and painting form one of the chief industries in a large part of the Thuringen Woods. The work is largely done by the peasant woodlanders in their homes. The commonest of all marbles are the "brownies.". About 600,000,000 of them are imported every year. They are not made from clay, as most boys suppose, but from a peculiar sort of sandstone which is found in these Gerand stone which is found in these German woods. Throughout the district there are large numbers of quarries and mills. These are owned by the marble capitalists. The stone is cut into small squares by machinery. These are then distributed by he miller to the workmen, who take them by the cartload to their homes.

How Brownies are Ground,

How Brownles are Ground.

The process of grinding is primitive in the extreme. Each workman has a machine as large as a sewing machine. A treadle which is worked by the foot furnishes the power. The machine consists of two disks, one of which rests on top of the other like pancakes on a plate. The lower disk is made of iron and is grooved with U-shaped furrows, which start at the center and go out to the edge as the spokes of a wheel extend from the hub to the rim. These furrows are wider at the rim than at the center. In the center there is a round hole precisely the size of the marble which is to be made from the square viece of stone.

be made from the square viece of stone.

These grooves are filled with the small squares of stone. Then the upper disk, which is made of wood, is pressed hard down upon the lower and the treadle begins to work. At each pressure of the foot



Twisting the Colored Rope. the wooden disk revolves. With each revolution the edges of the stones wear off until the squares become round, and at length the finished marble drops through the hole into the box below. The stones are kept wet during the grinding by a flow of water into the projecting edge of the iron disk. There are different disks for different sized mar-

China marbles are molded from clay in factories where they are baked and glazed just as china is molded, baked and glazed in the New Jersey factories. These factories, however, are small affairs for the most part, and the work is done by hand and foot power. The clay is molded in a foot-power press which looks very much like a grinding machine and has two wooden disks which come together but do not revolve. Each disk is filled with semi-round holes like that in one-half of a bullet moid. When the disks come together the halves of the holes fit tightly, forming a perfectly round mold. The clay is fitted into the holes of the lower disk. Then the upper one is drawn down, and when the pressure is removed the marbles are found lying in the cups on the lower disk ready for the baking The pressure is so great that the clay which does not find room in the molds is squeezed out at the sides, where it may be scraped together and used over again.

They Are Painted by Hand.

After the marbles are dried, baked and glazed they are sent to the pessant painters. Painting, like marble grinding; is done at the homes of the workmen. The painter's machine is a foot-power contrivance which looks like a turner's lathe set on end. In the end is a small cup into which the marble fits. When the trendle is pressed this cup revolves. The painter dips his fine brush in paint and holds it to the marble. One revolution paints a blue equator on the little globe. Another brush and a second revolution paints a red tropic of capricorn. Other intermediate latitudinal lines are traced both north and south of the equator.
Then the marble is turned half way around and the process is repeated. When it is finished the lines run at right angles in the style familiar to all boys. Then the marbles are sent back to the factory to be glazed for a second time, after which they are ready for the market. was a fine specimen of an American officer and gentleman, and no one more keenly than General Beauregard, his associate in arms, sympathized with the gallant soldier in the bitter mortification of the hour. Major Anderson, in common with all the other officers of the fort, had been the restriction of the fort.

Imitation agates are painted by hand and are dried in the open air. The paint is daubed on without much method. Glass "alleys" are made entirely in factories. The transparent glass is drawn out and pulled into a strand many feet long by two workmen, very much as molasses candy is pulled. The longer the strand is pulled the thinner it becomes. When it is an inch and a half or two inches thick it is allowed about two feet in length. On the sides of this strands of red, blue, yellow and green glass, as thick as a wheat straw, are fastened and the whole is then returned to the fur naces to be heated over again. When it is sufficiently hot to be twisted, the strand is taken out. The colored and the transparent

glass now adhere together. The Colored Glass Marbles

The workmen take the strand in tongs by each end and begin twisting and stretching it until it is of the thickness of the marble. One man twists to the right and the other One man twists to the right and the other to the left. This is continued until the small strands form a vari-colored rope in the center of the big transparent strand, like a twisted piece of wire run through the center of a twig of elder. The glass is then heated for the third time, and when it reaches the melting point it is dropped into a series of molds, like those used for bullets, just as a bit of malking each are well as just as a bit of melting sealing wax might be dropped into a hole. As the colored strands form the center of

the transparent strand, so in the finished marble they make a cone-shaped axis running from side to side as a pin is run through

filled with transparent glass. Then the figure is dropped into it and after that the molds are filled up with the transparent

Real agates are made from agate which is found in Oberstein, near the Rhine. They are ground round as lapidaries grind precious stones. In spite of the fact that



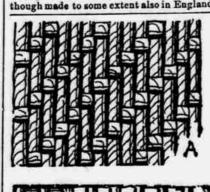
they are made from pieces of stone which are not suitable for the manufacture of jewelry, they are very expensive. They cost from 15 to 25 cents each. Once in a while a perfect agate is found in a lot. Such a marble generally commands a fancy price, which varies from 50 cents to \$5. BENJAMIN NORTHROP.

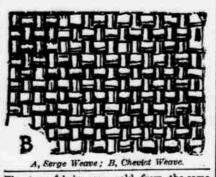
CHEVIOT AND SERGE.

Some Facts That Will Enable Buyers to Get Their Money's Worth. [WRITTEN FOR THE DISPATCH.]

Serge and cheviot are the staple woolens in use for hard wear the year round. Cheviot is strictly a Scotch production, though made also in England and France. Among the hills which give it its name leggings are made of it by the men, and petticoats by the women, to wear out in the wet weather. Serge is peculiarly a French product,

though made to some extent also in England.





The two fabrics are sold from the same counter and salesmen do not always dis-tinguish them to customers, yet they have points of difference which shoppers would lo well to understand.

do well to understand.

Berge is woven always of twisted threads, and always has a twill. Cheviot may have a twill or not Cheviot woven with a twill resembles serge, but the characteristic weave of cheviot is not a twill. It is woven more loosely, with more freedom than serge, and with a variety of pattern, with threads of varying firmness, and is a softer and more beautiful fabric. Cheviot may have many colors mingled in the weave—knots protruding here and there giving a broken surface of color, or more degnite fig-ures, and it is these that constitute a large part of the novelty cloths offered at the be-

ginning of each season.

But serge is expected to be of one-sized threads and of a solid color. Occasionally a cheap serge imitates a novelty fabric, but in general the only variety a good serge offers is in the size of its twill, which depends on the fabrance of the thread of the size of the on the fineness of the thread and the close ness of the weave. On these, and the twist, depends also whether the surface is rough or smooth. English serge has a larger twill than French.

A storm serge is one that is very fine and has been well shrunk. Some beautiful storm serges now in the market have a half visible plaid or check of another color running through them.

American made fabrics that bear the

names of cheviot and serge differ in quality from the imported ones. Our wool is not as goon as the fine Saxony wool from which



the European goods are made, and our manthe European goods are made, and our man-turacturers cannot import the European wool because there is a heavy duty upon it. Since the duty was enforced our fabrics have im-proved to some extent, but they are still in-ferior, and most women prefer to buy the foreign cloth at the larger price. An Amercan serge at \$1 a yard may seem to the eareless observer as a French one at \$1 50, but fabric experts will tell you that in it you have less value for your money, and this is the practical verdict indicated by the

Every all-wool fabric will shrink, and weathers, it should be sponged before being made up. Sponging can be ordered done at the store where the cloth is bought. The nerchant will deliver it 24 hours later, and will charge for it 5 cents a yard extra-Cheviots cannot always be sponged. Serge is on this account, as well as from its weave, the more useful of the two for all rough

Merchants have many names for fancy cheviots, which is confusing to the buyer. For example, one of the novelties of this spring is called "chevron." It has signing lines in the weave, after the form of a chevron, and the name refers to this and not to the fabric, which is a cheviot. The rough surface wool gown holds a dis-tinctive place in the wardrobe, and is the ideal gown for the busy hours of day,
ADA BACHE-CONE.

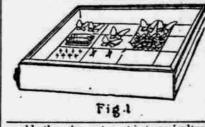
Polson in the Honey. There are certain plants which produce flowers which make not only poisonous honey, but also poisonous wax. Cases ofter occur of persons being made ill atter eating honey, and the cause is sometimes attributed to indigestion, but more frequently the Some glass marbles contain small china reason is found in the honey itself, figures. In making these the molds are half having 190 upon poisonous flowers.

A COLLECTION OF INSECTS.

Entemologist Riley, of the U. S. Depart ment of Agriculture, Tells How to Begin-A Call for Young Bug Hunters-The Cabinet and Speakers. [WRITTEN FOR THE DISPATCH]

Insects, as a class, are more numerous in species and individuals than all other animals combined. There is hardly a plant which grows that does not support many different kinds. Some of our orchard trees, the apple or pear, for instance, are infested by an almost countless host. A French author has written a charming book called "The Population of an Old Pear Tree," and the entire volume is made up of stories about the insects which lived on this one old tree. In addition to the hundreds of thousand

of kinds which live on plants, there are yet more which live in other ways. The maority, perhaps, of these feed upon other insects and thus act as a check upon the multiplication of injurious species, which



would otherwise put a stop to agriculture. Others are pests of the household, the storehouse and the granary; still others live in the water and feed upon small fishes and minute water animals, while yet others are parasitic upon higher animals and do much damage to our sheep, cattle and horses.

Each a Study in Itself. Some insects are so small as to be scarcely visible to the naked eye; others reach to a considerable size. Many, from their brilliant colors, are among the most beautiful creatures of nature. Each kind of insect has its own habits. Many live in commu-nities and possess instincts so highly devel-oped that they seem almost to be rational beings. Not a single one of the hundreds of thousands of different kinds can be studied throughout its successive stages of life without exciting the most vivid in-

Every boy, and especially every farmer's son, should be to a certain practical extent an entomologist. Miss Ormerod, the great English authority on destructive insects, no doubt would say that girls, too, should be educated to recognize and destroy the foes of vegetation.

of vegetation.

They say that "an old dog cannot learn new tricks," but there is hope in the rising generation. I believe they will make more money from the same land than their fathers did, and that they will do it by profiting by the experience of their elders and by their superior education, and especially by their practiced powers of observation. Collecting the Little Beings.

Every farmer's son should make a col-lection of insects. So should every tamily that has grass plate garden, shrubbery or



fruit trees. Every village improvement society should encourage the forming of these small collections; every local grange and alliance should help, and at every county fair premiums should be offered for the best collections, together with the best essays on the habits of injurious, and also beneficial, insects of that particular section. It is with the idea of helping on such movements and such studies that this series of short articles is prepared.

A collection of insects should be begun in

the proper way. It is true that the larger kinds, such as butterflies and the great beetles, can be transfixed with ordinary pins and stuck into cigar boxes without any especial care, but they will not show to good advantage and will soon be ruined by the little red ants or by certain other little in sects which are particularly fond of eating dead and dry specimens. There are three very necessary things to provide before be-ginning to collect. These are the boxes or cabinets, proper insect pins and spreading heards.

A Collection for Display. Different collectors prefer different kinds of boxes, but we may take it for granted that the young collector wishes at first a display collection. For this purpose a glass covered tray is the best. The most convenent dimensions are eighteen inches square and three inches deep. The cover to the tray should fit on by means of a tongue and groove, and the material of which the boxes are made should be about three-eighths of an neh thick.

We show in Fig. 1 a good display tray, which any carpenter, or in fact any ingent-ous boy himself, should be able to make cheaply. The maker should be careful to dove-tail all joints so as to render the boxes as tight as possible. The best boxes are lined with sheet cork, in which to insert pins, but the best boxes are expensive. A fair substitute may be found in firmly gluing small bottle corks at the proper interrals on the bottom of the box.

Such trays can be piled one upon the other, or a cabinet can be constructed to contain them, or they can be hung upon the wall. If hung up, a dark cloth curtain should be attached to each, as otherwise the apecimens would soon become sadly faded by the light

It one cannot afford these rather elaborate lass-covered boxes, a tight pasteboard box ill answer for some time. These can be made to order in any paper box factory.
They should be made of heavy pasteboard, the cover should fit very tightly, all joints should be carefully pasted over with paper. I have seen such boxes, 10 by 12 by 214 inches, with solid cover, which were made to order in New York City for 25 cents, and which were strong enough and large enough to answer fairly well for a tempor-

Pins to Transfix Them.

It is almost useless to try to make a collection with common pins. They are too short and too stout and altogether too clumsy. There better be, therefore, some little outlay of money in buying the real insect pius. These may be bought from any dealer in natural history supplies. Almost every large place has its dealer. They cost 15 cents per 100 or \$1 per 1,000. Nos. 2, 3 and 4 are the best to buy, and the beginner might send at first for 200 of these three sizes assorted. Any man with a road of land sizes assorted. Any man with a rod of land will find it profitable to have his children thus spend 30 cents. These pins are long and slender, yet strong, elastic and sharp, and are just suited for their purpose. The next thing to get ready, before be-

The next thing to get ready, before beginning the collection, is the spreading board. This is absolutely necessary if you are going to collect butterflies and moths. The idea of this spreading board can be readily seen from Fig. 2. It is made of two plees of thin, smooth pine wood, joined together by braces, with a crack between them sufficiently wide to admit the body of the insect whose wings are to be sured. them sufficiently wide to admit the body of the insect whose wings are to be spread, a piece of sheet cork or corn pith being fastened beneath the opening to hold the pina. It is well to have three or four of these spreading boards with the cracks varying in width; some for big-bodied the white of a raw egg, says an old-timer in the St. Louis Globe Democrat. If an egg is the St. Louis Globe Democrat. If an egg is broken over a burned spot the white shuts out the air and quickly soothen away the pain.

moths and others for slender butterflies and small moths.

And now if you are prepared with these three essentials, you are ready to care for your insects after you have caught them, and in the next article I shall say something about collecting.

C. V. RILEY.

INVESTION OF AN ALPHABET. Bow Sequeyah Tried to Prove the Indian

Equal to the White Man. Perhaps one of the most wonderful chievements of modern times is that of "the Indian Cadmus," Sequoyah, the inventor of the Cherokee alphabet and written language. As the first alphabet and so the fountain of all language is supposed to have originated with Cadmus the Phænician, so the first Indiah alphabet and the source of written language and literature among the red men of America is traced with absolute certainty to this famous Cherokee Sequoyah.

Although scarcely half a century has elapsed since his death, a mist of uncertainty already surrounds his birth and life. But somewhere very near the beginning of this century this remarkable personage was born in the Cherokee Nation and educated in its customs. In fact he never knew any other than the Cherokee language, which, until he began to record it, was like the other Indian dialects—purely oral.

Sequoyah's grandfather is said to have been a white man, but there was no avidence.

been a white man, but there was no evidence of it in the personal appearance of the

grandson.

The story goes that at a council of Cherokee chiefs in their town of Saunta, an old
reservation east of the Mississippi, there
was a debate on the comparative strength
and future of the red and white men. The
strongest argument advanced in favor of the
white man was his ability to use the "talking lest" and a count messes to a distance. ing leaf" and so send messages to a distance. Sequoyah listened silently and then burst out as if by an inspiration: "You are all fools! The thing is easy! I

can do it myself."

Thereupon he is said to have picked up a flat stone and with a charred twig from the council fire to have made certain marks upon it, each of which, he told his fellows, represented a certain word; he also told them that to-morrow or a month from then he could and would tell them those words without hesitation as soon as he saw the characters on the stone. an do it myself."

without hesitation as soon as he saw the characters on the stone.

From this beginning Sequoyah conceived and perfected the Cherokee alphabet, utilizing the cries of wild beasts, the call of the mocking bird, the shrill exclamations of children, the softest tones of the squaws and the notes of the rotund organ of the adult brave for his vocal sounds. When he thought he had gathered all the different sounds, he attached to each a pictorial sign or image—birds and beasts and inanimate objects alike furnishing him these signs.

And so the Cherokee alphabet was finished, the vocal sounds were reduced to writing, and in an incredibly short time the entire Cherokee nation learned and used it.

There are 85 characters in Sequoyah's alphabet, and by appropriation from the Cherokee Legislature a newspaper called the Advocate is now printed and circulated in that language.

THE BLACK SWALLOWER.

Species of Fish That Can Swallow Eight Times Its Own Bulk.

What a terrible, horrible animal a tiger would be were it able at one meal to swallow from 8 to 12 times its own bulk! It seems impossible that there can be any creatures able to do this, and yet, far down in the depths of the Southern seas, there lives a fish known as the Black Swal-

there lives a fish known as the Black Swallower, chiasmodon niger, which can swallow whole a fish 8 to 12 times larger than itself. Happily for the other inhabitants of the sea the chiasmodon niger is rare, there being but three known specimens in the museums of the world. In appearance the chiasmodon niger is a slender, elongated fish of uniform thickness, from eight inches to a foot in length. The skin is without scales, the head somewhat cone-shaped, narrowing forward. Its fins end in spines, thus preventing it



om becoming a dainty morsel for other fishes. The mouth is that of a monster; it is very deeply cleft, extending behind the eyes, and armed with many long, sharp-pointed and movable teeth. Such is its appearance with an empty stomach.
Going about in search of food it espies an-

other fish many times larger than itself. It darts upon this fish from behind, seizes the tail and gradually climbs over the struggling victim with its jaws, using first one and then the other. As the capfirst one and then the other. As the cap-tive is taken in, the stomach and integu-ments stretch out, until at last the entire fish is passed through the mouth into the stomach. Then the distended belly appears as a great bag, projecting out far backward and far forward. Over this horrible bag, and resting on it, the swallower seems to lie; the lower fins appear dislocated and lie far away from their usual position.

The walls of the stomach and belly have

been so stretched that they are transparent, and the species of the fish within can be discerned. Sometimes—three times at least such rapacity is more than the captor it-self can stand. At length the fish within he stomach begins to decompose and gas is created. The chiasmodon is forced over upon its back, when the imprisoned gas, as in a balloon, takes it upward from the depths to the surface of the sea. Thus have the three specimens been found floating on the surface, thousands of fathoms above their true haunts. In each instance the fish in the stomach has been about twice as long as the swallower, and from six to 12

THE SCIENTIFIC BOOMERANG. Professor Langley Has Made Some That

Beat the Australian. Incidentally to his investigations respect ing flying machines, Secretary Langley, of the Smithsonian Institute, has been making some most interesting experiments with boomerangs. He recently had made to order a number of ideal boomerangs, based order a number of local boolnersays, based as to shape upon mathematical principles. Ordinary boomerangs, such as are employed by the natives of Australia, would not serve. There are 50 of them in the National Museum, manufactured for actual use in the land of the kangaroo, but not one in the lot will do what the typical boomerang is advertised to do—namely, return to the thrower. These boomerangs of Prot. Langley's do return. One of his assistants, Prof. Otis T. Mason, the famous anthropologist has attained such expertness through practicing with them that, although a small man, he can throw them 100 yards, and they will come back to his feet every time.

How did the "black fellows" of Austra-

lia, lowest of savages in the scale of humanty, discover such a principle as that of the boomerang? Doubtless by accident. They have found the weapon useful for killing ducks and other water fowl on the marshes, where missiles thrown were not easily recovered. If the game was struck, the stick fell with it, and the hunter could wade in and recover both. Otherwise the boomerang came back and was ready for another shot.

What to Do for a Burn. When the flesh gets a bad burn many of the pain-killers are good, but in my experience I have never found anything like

BESIEGED BY WARREES. A STORY OF BOTANICAL ADVENTURE

as a botanist and chemist. This idea entered into every step of Karl's training, almost from his cradle. As the professor was himself no mean authority in these branches of science, it was no wonder that Karl, who came early to share his father's ambition for him, made strides far beyond his years. As soon as he was old enough, Karl spent his vacations in company with his father in scientific expeditions to various countries. The most important of these journeys was to Central America, in the interests of German capitalists, who were bent on discovering a cheaper mode of manufacturing quinine than that then known to science. As Central America is the home of the cin-chona tree, from the bark of which this drug is manufactured, it was deemed advis-able to dispatch Prof. Boch to this distant

tropical region.

Naturally Karl, as well as his father, hailed the opportunity to combine business, study and pleasure with great delight, and made speady and elaborate preparations for the voyage. They arrived safely at their destination, British Honduras, and entered eagerly upon their investigation. In the course of time it was determined that they have the later thank they have the safely are the safely as the safely should push their way a considerable distance into the forests of the interior.

After much trouble they managed to secure a competent guide who spoke both broken German and English, and set out to penetrate the dense tropical forests. They were at great pains to provide themselves



with everything in the nature of pouche and scientific conveniences for the proper storing of their specimens, but paid little or no attention to the "sporting" end of their outfit, leaving that to the guide.

outfit, leaving that to the guide.

Luckfly the scientists were each in the habit of carrying a revolver. The guide was armed with only an old carbine.

Not until they were well into the recesses of the great wood and the distant cry of some wild denizen reached the Professor's ears, did it occur to him that perhaps they had been careless in the provision of fire-

arms and ammunition.
"What is that?" he asked, as the indistinct cry of the animal was repeated.
"Kuguar," was the guide's reply.
"Are we likely to be troubled with beasts

of prey?"
"Can't tell." "Can't tell."

"What animal are you most afraid of?"
again questioned the Professor, as they
trudged along, picking their way through
the thick tangle of luxuriant vines.

"Warrees," was the native's reply.

"Warrees?" mused Karl, trying to identify the name with some tropical animal of
which he had heard. As his father asked

no further questions, but confined his inves-tigations to taking an invoice of the ammunition in his cartridge box, Karl conclude he was as ignorant of the nature of the bea but did not care to confess it. Karl followed his father's example drew from his pocket a well-nigh empty box of cartridges. It contained just four rounds

—28 cartridges.

As they approached a partial opening in the forest, beyond which towered a guard of magnificent trees, the guide pointed to them: "Red cinchona."

The alert botanist instantly noted that

the trees were of slightly different type than those which they had seen within the bounds of semi-civilization. In his eagerness reach them and sink his hatchet into the bark Karl outstripped his father and the guide, and was soon hidden in the labyrinth of vines and short vegetation with which the partial clearing was interspersed, the professor smiling approval at his son's zeal. Suddenly the guide stopped and minutely scanned a patch of bare ground which bor the marks of having been worn and tram-pled by the hoofs of a herd of small animals. An American farmer boy from the Central States would have declared it looked precisely like a hog-wallow. The guide was greatly sgitated. He ex-laimed, "Warrees! Warrees! Climb

"What are warrees?" asked the profes-

"Little wild hog. Big peccary. Go to trees," added the guide, who evidently en-tertained some wholesome and shameless fear of the invisible small brutes. Calling Karl, they made their way toward the nearest timber. Meanwhile Karl had pushed his passage through the tangled underwood to within a few rods of the cinchona trees. There was only one more stretch of the low shubbery to be waded through. He decided it would be easier to walk around than stumble through. Just as he was passing the end of this covert he



The Plower, Leaf and Fruit. neard a sharp bark or grunt, then a score or

the thicket. The cloud of dust which at first rose about the undergrowth concealed the makers of the disturbance, and Karl, drawing his re-volver, stopped and waited for the dust to clear away.

In a moment more he was able to dis

cern a great herd of small hogs, crowded together, their little alert eyes regarding him with stupid confusion. It flashed through his mind that these must be the peccaries of which he had read in books of travel and adventure. Perhaps they were the "warrees" of which the guide had

He decided that at any rate it would be discreet to climb the nearest tree. He roke into a vigorous run and made for the

BY FORREST CRISSLY.

heels.

With a desperate leap he threw his arms and legs about the trunk and proceeded to "shin" up, just escaping the snapping jaws of the foremost peccaries, who missed burying their tusks in his feet by only a few labels.

A whistle promptly signaled him that he had been heard.

rushed upon it, tumbling over one another in mad rage. When they separated, he tore a bundle of blank leaves from his note book

take careful aim. Each shot resulted in one less besieger, and Karl voted it excel-

"I'm through. It's your turn now," he called to his father.

The Professor was not so good a marksman as Karl, or else he did not have as



The Peccaries ve HaTreed Me. e, too, had exhausted his ammunition there was still a round dozen of the dangerous brutes holding the fort and showing no signs

of raising the siege.

The guide then trained his carbine upon them. It did deadly work as long as the of the nervous gunner seut his cartridge ease rattling down among the enemy after he had reduced their number to a half

There was but one alternative. They must simultaneously descend upon the reso-lute remainder and make a hand-to-tusk fight, the Professor and Karl using their atchets and the guide clubbing

carbine. The guide was reluctant-perhaps because he was much more intimately acquainted with "the nature of the beast." But a vigorous round of threats finally induced him to descend, and when within a few feet of the ground they all three iropped.

The entire battalion of warrees instantly

charged upon Karl. As he was unable to bury his hatchet simultaneously in the six heads the tusks of some two or three of them were tearing into the flesh of his legs before his father and the guide could reach the center of the attack to strike. Karl tumbled, fell, and but for a lucky stroke of the professor's hatchet, the last warree would have put an ignominious end

to the scientific ambitions of the young The father hastily dressed Karl's wounds and they beat as headlong a retreat toward civilization as the lad's condition would

permit, and you may be sure they took good care to keep close to the line of climbable

THE INSTINCT OF PLANTS.

Discrimination Each Shows to Produce Its Own Individuality.

It has always been to me one of the most amszing things that every plant should draw only its own colors and forms from the great laboratory of nature, never making a mistake, but each plant taking from its surroundings just those qualities that will produce its own especial characteristics, writes Mrs. Celia Thaxter. For instance (if left to themselves), the California poppies will take yellow of many resplendent shades for their color; the peacock will always be earlet-crimson with a black spot rimmed with white in every petal; the corn poppy will be clear scarlet; the opium white, and

By what power do they know how to se lect each its own color and shape, and be each only its own self and no other, when earth and air hold all the colors that the

earth and air hold all the colors that the good God has invented to make glorious his world of beauty?

The suble knowledge of plants—instinct, perhaps, would be the proper word—is most astonishing. If you dig a hole in the ground and put into it a rose bush, and fill up one side of the hole with rich earth and the other side with present of that other side with poor soil, every root of that

the rich and nourishing portion. That is a matter of course, but the instinct of the rose is something to think about, nevertheless.

Prof. Boch had one consuming ambition, and that was to see his son Karl win tame as a botanist and chemist. This idea entered into every step of Karl's training, almost room his cradle. As the professor was himtelf no mean authority in these branches of cience, it was no wonder that Karl, who make early to share his father's ambition promptly accepting his retreat as a challenge to pursuit, answered with a multitude of grunts, then took to the chase.

Karl heard their barks and the roar of their tread behind him. Even in the control of his flight he felt thankful that his athletic training had not been neglected. Well he might, for as he reached the first tree the barking horde was close upon his heals.

WRITTEN FOR THE DISPATCH

inches.
The click of their clashing jaws materi-

The elick of their clashing jaws materially increased the speed at which he worked his way up the cinchona. Whatever might be the result of their "cheap quinine investigations," he then and there concluded it was the most useful tree he had yet encountered.

No sooner did he succeed in reaching a safe perch than he fell to checking up the number of peccaries with the number of his cartridges. He found there were twice as many brutish faces upturning at him their small twinkling eyes and wiggling snouts as there were cartridges in his box.

small twinkling eyes and wiggling snouts as there were cartridges in his box.

Then the thought of his father and the guide flashed into his mind. They must have some ammunition. Perhaps there were shots enough between them all to slay the pack of nasty little brates.

"Father!" he shouted, "the peccaries have treed me! Come as close as you dare, then climb a tree! But keep up in the timber. If you hear me, answer with a whistle!"

A whistle promptly signaled him that he

had been heard.

"Be sure to get within a good pistol range, and where you can see them, for I have only about half as many cartridges as there are peccaries," Karl directed.

In a few moments he caught sight of his father and the guide cantiously picking their way among the timber toward the be-

their way among the timber toward the besieged tree.

Karl remembered that the accounts of the
peccaries described them as utterly devoid
of the instinct of fear, tenacious to the last
degree in pursuit of any creature which had
once excited their attack.

In order to insure against their attention
being drawn from him to his approaching
rescuers, he dropped his necktie down
among them.

The instant it struck the ground a dozen
rushed upon it, tumbling over one another

and let them down among the drove. These met the same fate as the necktie.

met the same fate as the necktie.

"All right!" called his father, from the branches of a neighboring tree.

"Now begin, shoot till you've used up your ammunition, but make every shot count, for I've less than half a boz," continued the Professor. Fortunately the beasts were huddled close together, and Karl an excellent shot.

"Bang! Bang! Bang!" went his revolver at regular intervals, as fast as he could take careful aim. Each shot resulted in

lent sport. But after a time his success elated him and occasionally he failed to make his aim fatal.

