

their claws and limbs are much stronger compared with the weight of their bodies than is the case with our common house cat, which climb trees easily enough. L. S.
BAIRD, McCloud River, California.

Editor Forest and Stream:

In regard to panthers climbing trees, I would say they can climb. In 1861 Stephen Ward and myself bought all of Charles Marsh's wolf and panther traps. Marsh and myself started on the 18th of April to go around where he had them set. One was on top of Cat Mountain, near the bluff. There had been a panther in this trap the fall before. The marks were plain. He went about five rods and jumped down on the next shelf or ledge, some 20ft. Here there was a spruce tree about 18in. through and about 20ft. to the lowest limb. The panther climbed into the limbs with the clog and trap. By the marks on the tree he must have been there several hours, then tearing loose, left trap and clog in the tree. We cut the tree down to get the trap and found three of his toes between the jaws. The same year in June Ward and myself got one at the Toad Hole on the carry between Grass Pond and Mud Lake. This was a very heavy trap weighing 22lbs, and the clog weighed probably 100lbs, besides. The first jump from where the trap was set measured 23ft. The panther went down to the right of the trail into a thicket of tamaracks and climbed one of them, perhaps 25ft., carrying trap and clog with him. He then apparently slid back down the tree. We got him the next day. The marks of his claws are still to be seen upon the tree.

PHILO SCOTT.

FINE, N. Y., May 20.

Editor Forest and Stream:

To add my mite to the tree shinning business: A year ago a friend of mine summered in camp about twenty miles from Albuquerque, N. M., with a queer old bald-headed genius from Massachusetts as guide. One night there was a row outside and the guide running out could see nothing definite, but thought he saw a black something high in the tree above him. He incontinently blazed away, for luck, and down came a huge mountain lion, shot dead. If that lion didn't climb that tree for fun what did he do it for?

JOHN PRESTON TRUE.

BOSTON, Mass.

A TROUP OF EDUCATED ANIMALS.

THERE has recently been a FOREST AND STREAM show at one of the big New York theaters. And it was more of a real bona fide FOREST AND STREAM concern than any of the previous stage exhibitions which have received a mention in the paper, exhibitions mostly—these last were—of unerring marksmanship with firearms and an athletic agility in smashing glass balls. But this particular FOREST AND STREAM show of the present is of interest to every sportsman and naturalist, because it shows to what a point of cultivation the so-called brute creation may be educated. At the Star Theater, Broadway and Thirteenth street, where Henry Irving has trod the boards with his halting ball-and-chain tread, and where more recently O'Conor reeked tragedy and dodged stale vegetables at one and the same time, has been a theatrical company of dogs, monkeys, horses and a goat, which, in ability to imitate the ways of that higher animal, man, has surpassed anything of the kind ever attempted. Professor Henry Brockmann, a pleasant, happy-looking German, who has succeeded in teaching his brute pupils the clever things that they do on the stage, and never before did a professor have scholars of whose accomplishments he could be more justifiably proud.

To enumerate in detail all the attainments of this high school of animals would consume more space than FOREST AND STREAM can spare. But to particularize some of the most remarkable features the first scene when the curtain goes up will do. Four monkeys, dressed in the same sort of clothes that we descendants of monkeys are now wearing daily on the street, are sitting in chairs about a table, which is laid for dinner. They are apparently out for a famous lark, for they turn to each other and make believe to chat, they gesticulate to one another as does he who is telling a wonderful yarn, and they are meanwhile too well bred in table etiquette to loll upon the board, to place their elbows on the cloth or to yawn. Presently, after the diners have adjusted to their satisfaction the white napkins that are tied under their chins, from the wings there trips a neat waitress in gown and pantaloons, a monkey Hebe, who jumps upon a vacant chair by the table and looks inquiringly from one guest to the other, as if taking their orders for consommé or other potage. As she scurries away toward the make-believe kitchen after receiving the orders one droll, rakish-looking monkey follows her figure with his eyes, and then nudges his neighbor and winks diabolically, for all the world as if he were saying, "Nice gal that, old chappie!" The waitress returns bearing the portions for the first course, and is assisted by a young monkey in knee-breeches and roundabout. This monkey is a mischievous little imp. While the guests are dining he steals bits from their plates, which he eats with a grin of enjoyment, and after he has brought in a basket of wine, and the professor has filled glasses all round, this precious young rascal slyly grabs a half empty bottle and gets under the table to drain it.

The second pantomimic comedy introduces some of the dogs. A white poodle walking on her hindlegs is dressed as a modern belle; a tailor-made poodle, indeed, with white fluffy bangs, faultless attire, even to the bustle, and a walk that fairly imitates that of some of the tailor-made girls of Fifth avenue. She is accompanied by a discreet duenna in the person of an old-maidish-looking monkey, who is as prim and precise as duennas in caps and spectacles always are. A coal-black poodle dude, in a suit perhaps by Poole, enters from the left, walking very erect and Englishly on his hindlegs, and flirts a little with the tailor-made miss. The duenna is properly shocked, and tries to draw her charge's attention from the "horrid man;" but the young miss boldly encourages the dude's attentions, and finishes by walking lovingly off the stage with the young masher, while the duenna follows meekly behind.

The most interesting pantomime of the performance occurs when a liveried coachman monkey drives out his monkey master and monkey mistress in a miniature open coach, with a liveried monkey "boots" sitting in solemn state behind. The "horses" are two dogs running on all

fours, and they are as skittish and restless as thoroughbreds. The coachman has some difficulty in guiding them, and indeed they eventually run away, during which event the off hind wheel of the coach comes off, the hind axle of the coach breaks, and footman, master and mistress are tumbled out. The master is not hurt, neither is the mistress, and as soon as the former has used his weight to balance the coach back to a semi-upright position, he attends to the poor footman, who is sprawled out his full length, evidently seriously injured. His master feels his ribs, listens to his heart beats, and goes through some hocus-pocus which resuscitates the poor footman. Meantime the coachman has chased and captured the runaway team, and it is very amusing to see the monkeys as they all stoop with their hands on their knees, exactly as men would, and examine the broken axle and wheel very critically.

Besides the above dramatic bits there are dogs that jump forward and backward, on four feet and on two feet; dogs that walk on their forelegs alone, and dogs that stand on their heads; dogs and horses that dance waltzes and polkas and square dance movements, and that keep accurate time to the music in doing it, too; a monkey that walks a tight rope, and a monkey clown that trundles a wheelbarrow, makes funny failures on the tight rope and imitates the well-known characteristics of the human circus clown; a dog that rides a bareback horse around a ring and jumps through hoops, on and off the horse, and shows the highest judgment in balancing and jumping; a goat that climbs to the top of a pyramid of bottles and balances himself there on two legs; and ponies that do all manner of tricks, such as waltzing on their hindlegs, marching in time to music, leaping and forming intricate and beautiful figures on the stage.

Now, I am something of a dog training crank myself, and I watched this performance, therefore, with great closeness and interest. The feature that surprised me most was the fact that Prof. Brockmann gave very few audible commands to the animals, and when the monkeys and dogs were performing their most wonderful parts he apparently said nothing to them and made no gestures to guide them. The brutes seemed to go through their performance as if they understood perfectly the rôles they were expected to fill. I was positive that certain of the dogs were able to count, because in a scene where several of them at once were executing fancy movements, leaps and sommersaults together, an "act" in which the ensemble would be entirely lost if one single animal had forgotten on which turn to execute his leap or his sommersault, not one dog failed to put in his particular act at just the right period, although he had perhaps been placed in the same relative position to the other dogs three or four times before. And their trainer was naturally unable to count for all of them at once and issue his commands to all at the same time.

After the performance I had a talk with Prof. Brockmann on the stage. He is a fine-looking German of about forty-five years, with a pleasant face and manner. "The whole secret of training animals," said he, "is to first get so thoroughly acquainted with your animal that you understand his every mood and temper. Do not treat him as if he were a dunce and unable to reason or think. Every animal can think and can reason, too. In training my dogs and monkeys I always let them suggest tricks and little acts to me. I give them a rudimentary education, first in comparatively simple things, such as walking on their hindlegs, carrying articles, jumping, and so forth. Then the rest seems to come naturally and easily to them, and as I live right among all my animals the greater part of the time and talk with them."

"Talk with them?"

"Certainly. I don't talk to them as I talk to you and they don't talk to me as you do, but we understand each other just the same, and we like each other, sympathize with each other and share one another's griefs and joys, I may say."

"When I say I let my animals suggest tricks to me I mean that they are constantly at one time or another adding a little act to those I have taught them, and I then make the animal who has accidentally added something clever to his performance do the act over and over again until he understands that his new trick is a part of every performance. The clown monkey in the tight-rope performance, you noticed, chalked his feet, just as the tight-rope walker does, and then very comically chalks his nose. That always causes a laugh, but it wasn't done in the programme until one day when we had some new and queer-smelling chalk, and the clown, after he had chalked his feet as usual, put it to his nose and smelled it. I made him do it again and again after the performance and he has done it at every performance since. At the first rehearsal of the runaway coach act, after I had taught the monkey footman to lie still on the stage after the upset, the big monkey on the seat, who has a great affection for the little footman monkey, ran to him in real unfeigned concern, thinking he was truly hurt. I saw that this little act would be a good addition to what I had already taught, and it has been done at every performance.

"Do I use the whip in training? Almost never. I have a different method of teaching each act, and I could not explain to you all the ways I go about the education of the animals without consuming too much time. But I never break the spirit of a dog or other animal, and I exercise my will power over them so that my mind has an influence on their minds. Oh, yes, brutes have minds, and good minds, too. And I always reward the animal when he does anything to my satisfaction with something that he likes to eat. I use the whip only to punish my pupils when they have failed in their lessons, and they understand so well this fact that if I see a dog or monkey is neglecting some part of his performance I have only to point the whip which I carry in his direction and he will use his brains to remember in what he is making a mistake, and generally with success if I can myself discover his error in time. If he fails I do not whip him before the audience, because that would spoil the performance, but after the show is over I whip him, and then make him go through that portion of his act in which he failed until he is perfect in it."

"Do you use poodles instead of other dogs because you consider them the most intelligent?"

"Oh no. When a poodle is nicely clipped he makes a finer appearance on the stage than any other dog. That is the only reason I use them. I consider the poodle, however, to be as intelligent and easily trained as any

other dog. You think a setter or spaniel or pointer is more intelligent, perhaps, because they learn to hunt and point and find game so readily, but you must remember that all those attainments are natural to these dogs, because they come by instinct and generations of breeding hunters."

"Do you begin teaching the dogs when they are puppies?"

"No. A dog's nervous organization and brain are not fully developed until he is one year old, and until that age I never teach a dog anything except to know his name. There is no way of ascertaining the age of a monkey, and I find them tractable to learn at whatever age I happen to get them. The same is true of horses and goats as of dogs. They learn most readily and retain their educations best when their instruction begins at the age of one year."

"I do not give orders or signals to the animals on the stage. They have gone through their performances so often that they understand what they have to do without direction."

"Can dogs count? Certainly, and so can other animals. And they are very appreciative of music, too. I train them and rehearse them with an orchestra playing at the same time, and they associate certain acts with certain melodies, and are guided by those melodies. If my orchestra leader should start an act with the wrong tune it would break up the performance."

Prof. Brockmann says his monkeys do not stand the strain of acting so well as the dogs. It is a severer task for a monkey to perform on his hindlegs alone than it is for a dog, and the former are subject to back-ache and other ills to which the dogs are strangers.

The animals are fed but once a day. Their daily meal is given them each night after the evening's performance. The dogs are fed on rye bread, over which is poured the liquor from boiled beef, and each canine is also allowed a portion of the boiled beef containing considerable bone, the meat and bones having been chopped into pieces about the size of an egg. In feeding them the dogs are formed in line and are called up to the festive board—or rather the festive bowl—in turns. When the Professor thinks one dog has eaten enough he orders him back to the ranks and calls out the next in line.

Prof. Brockmann has one poodle who does not act now. He is old and lame, blind and deaf. When I asked the Professor why he carried this old and useless dog about, the pleasant German's face lit up with an expression of great tenderness. "Ah," said the Professor, "Fritz is no longer useful, but the old fellow has served me faithfully and made much money for me, and shall I turn him out to die when he is old? No; Fritz will be my welcome pensioner so long as he lives." And then the old dog limped up to the speaker's side and put his gray muzzle in the Professor's hand.

I am beginning to believe that perhaps dogs can talk after all.

SENECA.

BITE OF THE GILA MONSTER.

BY DR. H. C. YARROW.

[This is Part VI. of Dr. Yarrow's series of papers on "Snake Bite and Its Antidote.]

ON Feb. 7, 1883, Drs. S. Weir Mitchell and Edward T. Reichert read a paper before the College of Physicians of Philadelphia, entitled "A Partial Study of the Poison of *Heloderma suspectum* Cope, the Gila Monster," in which the statement was made that after several experiments with the saliva of this reptile, they had come to the conclusion that it possessed strongly venomous properties. This had been suspected by some naturalists, from the fact that this lizard possessed anterior deciduous grooved teeth, which communicated by ducts with large glands near the angle of the lower jaw. All sorts of conflicting reports have been published from time to time regarding this reptile, some observers claiming that it is deadly venomous, others believing it perfectly harmless; in fact, in some parts of the Southwest it was kept as a household pet. Boocourt and Dunneril mention the bad name it has in Mexico, and Sumichrast states that the natives hold it in the utmost terror, and consider it as more fatal than any serpent. A fowl bitten by it died in twelve hours, with bloody fluid exuding from its mouth, the wound being of a purple tint. A cat bitten was very ill, but recovered, remaining thin and weak. Sir John Lubbock reports that a *Heloderma* sent him killed a frog in a few minutes, a guinea pig in three minutes. Dr. R. W. Shufeldt, of the United States Army, reports serious symptoms after having received a bite on the right thumb, but no permanent disability followed.

The writer has for several years endeavored to trace out an authentic account of death resulting from the bite of a Gila monster, and the following is all the evidence in his possession. The first account was secured through Dr. S. P. Guiberson, of Ventura county, Cal., and is as follows:

"G. J. Hayes, a miner in from the Frazer mine, says that in 1878, or '80, in Tip-Top Mining Camp, Arizona, he saw a Gila monster bite a man by the name of Johnny Bostick, who at the time was under the influence of liquor. That he took hold of the *Heloderma* and shoved his finger at it, and the reptile seized his finger, and its jaws had to be pried open before he could disengage his finger. The *Heloderma* was 22in. long and lay on the card table. It was also seen by a man named Lou Smith, and a lot of Italian miners. Immediately Mr. John Bostick drank large quantities of liquor, and from the effects of the bite one side was paralyzed, and he died in about three months, April 19, 1878. I hereby certify that the above statement is correct. (Signed) G. J. HAYES."

Subscribed and sworn to before me, a notary public, this 19th day of April, 1883.—S. P. GUILBERTON, Notary Public for Ventura county, Cal.

The second affidavit, which follows, differs somewhat from the first, but relates to the same individual. The query is, was the *Heloderma* bite the cause of death or was it the whisky so lavishly administered.

STATE OF CALIFORNIA, County of Ventura.—R. C. Carleton who first being duly sworn deposes and says that he was present at the time and knew of his own knowledge, that Johnny Bostick of Tip-Top, Arizona, was bitten by a Gila monster, from the effects of which he afterward died. That the Gila monster seized one of the fingers or thumb of the said Johnny Bostick, and that in order to disengage the reptile the boy cut its head off, that defendant thinks it occurred in 1883. Subscribed and sworn to before me this first day of December, 1883.—R. C. CARLETON.

S. P. GUILBERTON, Notary Public. (A true copy.)

In conversing with Dr. F. V. Ainsworth, U. S. A., who has had a large experience in Arizona, upon the subject

of the bite of the Gila monster, he informed the writer that he had heard of a case of death from the bite of this reptile, but that his brother Frank K. Ainsworth was conversant with the details, and he obligingly offered to write and procure full particulars. From the letter which follows, it will be seen that the case is reported by Dr. G. E. Goodfellow of Tombstone, Arizona, to Dr. Ainsworth:

TOMBSTONE, July 23, 1887.—*My dear Ainsworth:* I at last am ready to reply to your letter concerning "snakes." The Fairbanks case was as follows: Yeager, about 55 years of age, was in May, 1888, in Fairbanks, Arizona Territory, bitten by a Gila monster. He, to prove the impotency of the beast, put his left thumb and forefinger into its mouth, and he was bitten. He was immediately loaded to the guards with whisky—it happened in a saloon—and he seemed all right, save for a slight numbness and swelling in the hand and arm. He sat down in a chair in the saloon, talked with those around for an hour. The crowd thinning out, he seemed to drop asleep. In about an hour more, the saloon keeper spoke to him, but not making a reply, he was taken hold of and found to be dead. I was sent for, but before I could leave received a second message announcing his death. He was a man addicted to the use of liquor, and so far as I can ascertain had been on a prolonged spree for months. Whether he died of the reptilian poison or a combination of whisky, disease and Gila monster I cannot say.

About four years ago on the lower San Pedro I was informed that a man had been bitten in the foot while in the field and died within three hours. I could neither prove nor disprove the case.

That the Gila monster is a poisonous lizard cannot now be denied. That its bite is fatal uniformly is open to discussion. I have always considered that they were a trifle more poisonous than the scorpion, tarantula and centipede, not even approaching the rattlesnake, and I have been accustomed to regard the bite of the three first mentioned as little worse than the sting of a bee or wasp. I have known of bee stings killing, but though I have seen many bitten, and have had a personal experience as well, never have I known of a death to occur from the bite of a scorpion, tarantula or centipede. That they can kill under certain conditions I am convinced. * * * Very respectfully, G. E. GOODFELLOW.

These accounts are the only authentic ones the writer has been able to gather, after ten years of constant labor and research.

On the other side it may be stated that Mr. Horan, the superintendent of the National Museum, has been bitten several times by this lizard without serious results following.

The first experiment of Mitchell and Reichert was as follows: "About 4 minims (of saliva) was diluted with one-half cubic centimetre of water, and thrown into the breast muscles of a large strong pigeon at 4:25 P. M. In three minutes the pigeon was rocking on its feet and walking unsteadily. At the same time the respiration became rapid and short, and at the fifth minute feeble, at the sixth minute the bird fell in convulsions with dilated pupils, and was dead before the end of the seventh minute. The first contrast to the effect of venom was shown when the wound made by the hypodermic needle was examined. There was not the least trace of local action, such as is so characteristic of the bite of serpents, and especially of the *Crotalidae*. The muscles and nerves responded perfectly to weak induced currents, and to mechanical stimuli. The heart was arrested in the fullest diastole, and was full of firm black clots. The intestines looked congested. The spine was not examined." A number of other experiments made by these experienced investigators left no doubt in their minds as to the terrible venomous character of the *Heloderma* saliva.

Before giving notes of the experiments made at the National Museum, it may be well to describe the process by which Drs. Mitchell and Reichert obtained the saliva and our own. The first consisted in "provoking the reptile to bite on a saucer edge, which it was not disposed to do. When once it had seized the saucer it was hard to pull it away, so powerful was the grip of the lizard's jaws. After a moment a thin fluid-like saliva dripped in small quantities from the lower jaw. It was slightly tinted with blood, due to the violence of the bite, and it had a faint and not unpleasant aromatic odor. The secretion thus collected from the mouth was distinctly alkaline in contrast to serpent venoms, which are all alike acid."

Our own method consisted in forcing the lizard to bite upon a piece of artist's gum, which being elastic and yielding, did no injury to the teeth and afforded a fair hold. So soon as the saliva appeared to be flowing it was carefully swabbed up with pledges of absorbent cotton, which were washed out with glycerine, and in this way we had no difficulty in securing all of the fluid needed. It was preserved in glycerine the same as our serpent venom.

The first experiment, Nov. 8, 1887, was as follows:

Nov. 8, 1887.—12:17 P. M.—Held left hindleg of rabbit to *Heloderma*, who grasped it with his teeth, and held on for three-fourths of a minute, biting fiercely.

1:30 P. M.—Rabbit a little lame, but enjoyed eating as much as before.

3 P. M.—No result so far.

Nov. 9.—Rabbit appears to be perfectly well with the exception of a very slight lameness of the left hindleg, due to the lacerated wound made by the lizard's teeth.

12:30 P. M.—Held leg of another rabbit near the mouth of a different *Heloderma* from the one used in the former experiment, and irritated the reptile until he took hold. In this case the rabbit's leg was seized several times and bitten to the bone, the reptile being unwilling to let go. There was a copious flow of saliva, which ran over the teeth wounds and was rubbed in by the experimenters, care having been taken to remove the hair from the rabbit's leg. In fact this was done in every case, as it was feared the thick fur might prevent the saliva from reaching the wounds.

3 P. M.—No result.

Nov. 10.—No result.

Nov. 11.—No result except slight lameness.

Nov. 17—12:45 P. M.—Injected three minims of solution of *Heloderma* saliva in leg of hen (brown). Respiration somewhat increased, but no other symptoms noticed.

2:30 P. M.—Fowl in about the same condition; respiration slightly increased and breathes with beak partly open.

Nov. 18.—Fowl appears to be entirely recovered.

Nov. 20.—Chicken completely recovered.

In this case the increased respiration was probably due to the fact that the chicken being a very noisy one it became necessary to compress its throat to avoid annoying other workers in the Museum.

Nov. 22—12:19 P. M.—Injected 10 minims of solution of *Heloderma* saliva and 10 minims of water into left breast of another hen. This chicken was very thin

but perfectly healthy, and had been used for two rattlesnake venom experiments with ligature and recovered.

12:25 P. M.—Increase of respiration, wants to lie down, defecates, feathers ruffled.

12:30 P. M.—Panting heavily; peculiar outward and inward movement of rectum; eyes closed and very drowsy.

Nov. 23.—Chicken entirely recovered, and has been so for several days.

12:35 P. M.—Injected 25 minims of solution of *Heloderma* saliva into left leg of another hen.

12:40 P. M.—Hen lying down, respiration quickened, and breathes with mouth open.

12:30 P. M.—Chicken still lying down and breathing fast.

Nov. 29—11 A. M.—Chicken in same condition as yesterday; will not eat.

Dec. 1—11 A. M.—Chicken improving; eats a little.

Dec. 2—11 A. M.—Chicken appears to be all right; eats well.

Dec. 2—11 A. M.—Chicken entirely recovered.

Dec. 5—12:15 P. M.—Injected 25 minims of solution *Heloderma* saliva into breast of chicken, same quantity into right leg, same quantity into left leg, making in all 75 minims. In a short time fowl had copious watery discharge *per anum*, with a curious oscillatory movement of that opening.

12:25.—Chicken lying down with its feathers much ruffled.

Dec. 6.—Chicken found dead. This fowl had been used for previous experiments, and was very thin and weak, and it is by no means certain whether the copious diarrhoea probably produced by the glycerine did not cause its death.

Dec. 5.—Forced largest *Heloderma* to bite a chicken on the leg (from which feathers had been removed) several times. There was a copious flow of saliva and many lacerated wounds.

Dec. 6.—Chicken seems perfectly well, no swelling or local manifestations whatever.

Dec. 7.—Chicken perfectly well.

Fearing that possibly the glycerine solution of venom (2 drs. of saliva to 6 drs. of glycerine) was too weak or had lost its strength through keeping, on Dec. 8 the following conclusive experiment was performed:

12:15 P. M.—Forced open the jaws of the largest and most savage *Heloderma* and collected upon a piece of absorbent cotton from ten to fifteen drops of fresh saliva. An incision was made in the breast of a chicken and the cotton placed in it and allowed to remain.

Dec. 10.—The chicken appears perfectly well; no sign of indisposition or local manifestations whatever. Wound appears to be healing kindly.

Jan. 20, 1888.—Wound in breast has been healed for some time, the cotton remains where it was placed and can be felt encysted under the skin and has produced no injury.

April 4.—The chicken alive and healthy with the cotton still *in situ*.

This experiment would seem to show that a large amount of the *Heloderma* saliva can be inserted into the tissues without producing any harm, and it is still a mystery to the writer how Drs. Mitchell and Reichert and himself obtained entirely different results. Were it not for the well-known accuracy and carefulness of Dr. Mitchell it might be supposed possibly that the hypodermic syringe used in his experiment contained a certain amount of *Crotalus* or cobra venom, but under the circumstances such a hypothesis is entirely untenable. Moreover no local symptoms were manifested as would have been the case had venom been inserted. Both the Gila monsters were good-sized active specimens, full of vigor, secreting a considerable amount of saliva, and we can hardly suppose that the short captivity they had suffered could have so modified their saliva as to render it innocuous.

THE BEAR IN CAMP.—Fredericton, N. B.—Editor Forest and Stream: Mr. Silver says a bear will not enter a camp door.

I know that they do not care to do so, but yet they will. Some few years ago I saw where one had entered a camp by the door, and taken out a paraffine lamp, thrown it down; and when the body of the lamp lay at one side, and the chimney at the other, brum had lain down and rolled himself between the two. The bear seems to have a great liking for this oil. I have also known other instances, where bears have gone into camps by the doors, though they usually prefer to knock off the shingles and go in at the back of the camp.—EDWARD JACK.

RECENT ARRIVALS AT PHILADELPHIA ZOOLOGICAL GARDEN.—Received by purchase—One papa armadillo (*Tatusia peba*), one vulpine phalanger (*Phalangista vulpina*), one velvet monkey (*Ceropithecus lanigaster*), one Campbell's monkey (*Ceropithecus campbelli*), one green monkey (*Ceropithecus callicebus*), three sooty mangabeys (*Cercopithecus fuliginosus*), four ezelinus monkeys (*Semnopithecus ezelinus*), one serval (*Felis serval*), one wild swine (*Sus scrofa*), two gray foxes (*Vulpes cinereo-argentatus*), one wedge-tailed eagle (*Aquila audax*), four snow geese (*Anser hyperboreus*), one European quail (*Coturnix communis*), one kestrel (*Tinnunculus alaudarius*), two passerine parakeets (*Psittacula passerina*), four nonpareil finches (*Cyanospiza ciris*), and 2 indigo birds (*Cyanospiza cyanus*). Received by presentation—One opossum (*Didelphis virginiana*), one green monkey (*Ceropithecus callichirus*), eleven striped gophers (*Spermophilus tridecem lineatus*), one common Macaque (*Macaca cynomolgus*), one night heron (*Nyctihera grisea*), two turtle doves (*Turtur risorius*), two painted terrapins (*Chrysemys picta*), five alligators (*Alligator mississippiensis*), and one dragon-like lizard (*Dracanaea guianensis*). Born in garden—One American buffalo (*Bison americanus*), four prairie wolves (*Canis latrans*), one aoudad (*Ovis tragelaphus*) and one hybrid deer (from *C. virginianus* ♂ and *C. mexicanus* ♀).

GRAND EXCURSIONS TO CALIFORNIA.—The Burlington Route is the official route for the teachers bound for the National Educational Meeting at San Francisco. Join the splendid official excursion party from New York, Pennsylvania, Brooklyn, New England, Ohio, Michigan and Indiana, leaving Chicago July 3, 5, 8, 9 and 10. Magnificent trains, free chair cars, Pullman and tourist sleepers, etc. The public entitled to one fare for this occasion. For further information write E. J. Swords, 317 Broadway, New York city; H. D. Badgley, 306 Washington st., Boston, Mass., or address P. S. EUSTIS, G. P. & T. A., C., B. & Q. R. R., Chicago, Illinois.—Adv.

MR. REUBEN HARWOOD, Somerville, Mass., whose advertisement appears in another column, issues some very complete price lists of guns, rifles, revolvers, etc., which it would be well for interested buyers to see.—Adv.

Game Bag and Gun.

RIFLES FOR SMALL GAME.—II.

Editor Forest and Stream:

Since the article under the above heading appeared in FOREST AND STREAM of May 10 I have received so many inquiries about the .22-cal. rifle that I have been tempted to answer some of them through your columns. While I fully realize that I have yet a great deal to learn, I will give a few points that have been learned in the school of experience.

To those who are so fortunate as to possess a good rifle it is sometimes a mystery why they do no better work with it. Here is a point to begin with, simple as it is, it is many times forgotten or ignored altogether. Keep your rifle clean. When your barrel is clean it remains fixed and unalterable, every time the same; but when your grooves are full of dirt and lead you are dealing with an unknown quantity. Many a one who would not think of such a thing as firing a muzzleloading rifle fifteen or twenty times at a target—trying to do fine work without cleaning it, will blaze away with the breech-loader shot after shot, and when he sees plainly enough that the first two or three shots are the best, does not stop to think that in order to do its best the rifle must be clean. Of course it is often necessary to use several shots without cleaning when hunting, but in target work where fine shooting is desired it is a great mistake. Try it. Shoot one string without cleaning, and in the next one have the barrel perfectly clean every shot.

This question has been asked me by so many that it requires an answer. Whose make of cartridges are the best? My experience has proved the .22 short cartridge made by the Winchester Co. to give the best results. I have used many thousands of all the most prominent makers and have made my best targets with Winchester cartridges. I however can not say this of all their cartridges. The .22 long "rifle" cartridge I think is made only by the U. M. C. Co. and with a Stevens rifle I have made some remarkable targets using this cartridge. With the Maynard 10-45 c. f. I use the shells (everlasting) made by the manufacturers of the rifle expressly for it; also use the reloading tools made by them and run my own bullets from pure lead and lubricate with a home-made compound of which I will say more further on. I use American Powder Co.'s Dead Shot FFG. powder and after many years' experience with all kinds, must pronounce it the very best for fine work that I ever used.

There is a point worth considering regarding our cartridges being new and fresh. If not fresh from the factory the lubricating material becomes hard and brittle, or perhaps the bullet is all corroded; and in reality there is little or no lubricant left. Wipe it all off and put on new. Do not put on too much, for that is just what will cause wild shooting, especially in cold weather. It should be evenly and lightly coated; but my advice is get new, fresh cartridges if possible. I have an excellent lubricant that I have found to be the best thing for large or small bullets that I ever saw. If any of my brother riflemen would like to give it a trial I will mail them a box of it if they will send stamps for the postage and packing. (It is not for sale so this is not an advertisement.) It is cheap to produce and I shall be pleased to give it to any practical rifle shooter who will test it thoroughly.

One question was asked me that shows that a wrong view is taken by some shooters regarding the holding of a rifle for hunting shots, which are most always made off-hand. How can you hold a rifle still enough to do such shooting? I cannot hold a rifle still, not for one second. If I try to hold still the gun begins to wobble, and the more I try to hold it the worse it will go; and just here is one mistake that young riflemen are apt to make. They will try to use a hip rest or a body rest; they set every muscle as rigid as they can, hold their breath, shut the left eye until they are most ready to pull, and then close the other one; go through all sorts of unnatural performances, and—well, strange to say, some of them get a good target sometimes on the range. I have had some very successful hunting trips, and this is the way I go to work. I use the ordinary hunting butt on the rifle, and like the shotgun butt on the larger caliber. I hold the rifle the same as I do a shotgun, with both arms free from the body, and with the left hand well out under the barrel. I leave both arms free to carry or swing the gun wherever I wish it to go. I keep both eyes open and then cannot see any too well in the woods. I use the Lyman rear and ivory head front sights. Many a time I have had a squirrel start on his travels when I was raising the rifle to draw a bead on him, and following along after him, either up or down a tree trunk or along a limb with the little white head, tumbling him at the crack of the rifle. This as you will see would be almost impossible if the rigid, cramped and awkward positions that we see on the ranges were used.

The whole secret (if any there be) of off-hand shooting at game is to keep both eyes open, watch your game, and when the front sight is there give the trigger the pressure instantly, or in other words, catch it when it gets there and do not let it go by. A ball of wood suspended by a string and made to swing like a pendulum on a clock makes a good target for practice, using the position I have described. Let your arms move easy and free, put no unnecessary strain on the muscles, keep both eyes open and you will be surprised to see how often you will hit it and how it will help you to hit small stationary objects off-hand. In this way very nervous persons often do the best shooting, as they "catch" the trigger quickly and at the right instant. Rest shooting is well enough in its place, and is of course necessary in adjusting sights and testing the shooting qualities of the rifle, but it is entirely out of the question when you are in the woods after game. Glass balls thrown in the air are well enough for amusement, but are of no value as regards making a good shot for game shooting. With my 10-45 Maynard I have shot woodchucks dead at over 100yds. on several occasions, and every one who has ever hunted them knows that they are hard to kill. With the 8-30 cartridge I have made several old veteran Thomas A. Eustis bats bite the dust and stop within four feet of where they were shot, and most of us know that the old fellows have "nine lives." I have dropped many a ruffed grouse from tall trees with this same little bullet, and on one occasion killed a black duck at about 200yds. that I shot at out of spite, as I found I could get no nearer.

The .22-cal. is so light and handy to use and carry, the