

GENERAL SCIENCE

Small Game Hunting

How would you like to go hunting where there are no limits, where game is always plentiful, and where all "kills" can be mounted? You can hunt with a camera in your back yard.

See Front Cover

By FREMONT DAVIS

► AS A HUNTER, I probably enjoy the best conditions in the business for plying my sport.

For me there are no limits, no seasons, no worry about the game being too small, no sweat as to whether the prey I am stalking is male or female, game is always plentiful and when I do bag something, it can be mounted with little or no trouble every time.

Sound interesting? Well it is. It is small game hunting with a camera. And by small game hunting I mean anything from the enormous size of a kitten to the tiny soldier ant lugging the day's harvest back to camp.

For Americans, stalking birds and bees with a camera is a relatively new dimension to a very popular and old hobby. But its fascination cannot be denied, for it takes all the cunning, skill and preparation that big game hunters need on an African safari.

Basically, there are many similarities between the much publicized and glamorous big game hunting and its poor man's counterpart, small game hunting with a camera.

Equipment Can Vary

The equipment, for instance, can be as primitive as the African native's spear, or as extensive and expensive as one can afford. Chances for more and better kills are afforded with highly accurate equipment, however. By the same token, the hunting technique itself is virtually the same. Game must be stalked, movement kept to a minimum and, at times, almost impossible positions must be assumed by the hunter to bag his quarry.

Calmness, patience, accuracy and steadiness are as much a part of the sport of small game hunting as they are of high-powered big game doings.

There are several methods of hunting with the camera, depending on the type of camera used and the types of game to be hunted.

For purposes of hobbying, I have kept the use of equipment down to a minimum. A single lens reflex camera with extension tubes has proved adequate for close-up shots of bumblebees, dragonflies, water skaters, etc.

The lens is a two-inch high-speed lens of the type found in most 35 mm cameras. The camera itself is a Rectaflex with a 50

mm f/1.8 Angenieux lens. Although other cameras will serve the purpose of small game hunting, the single lens reflex camera offers the advantage of permitting the photographer to examine the image that will make his picture up to a fraction of a second before the shutter release is squeezed.

With small quarry, I have found, the trick is to get the picture arranged so that it is interesting and at the same time tells a story. As much as possible the quarry should be parallel to the film to reduce the depth.

You do this because of technical considerations. You must get so close to your subject the chances are that you will be working at the limit of the ability of the lens to resolve detail. The distance from the front of the area in your picture that is sharp to where it gets fuzzy in the background is so small it may not cover the thickness of the insect.

To keep this depth, you should close the lens down as far as you can. This means that even if you have an f/1.8 lens, use the lens setting f/11 or better yet f/16 or f/22.

In effect, what you have done is to increase the depth of focus by decreasing the lens opening.

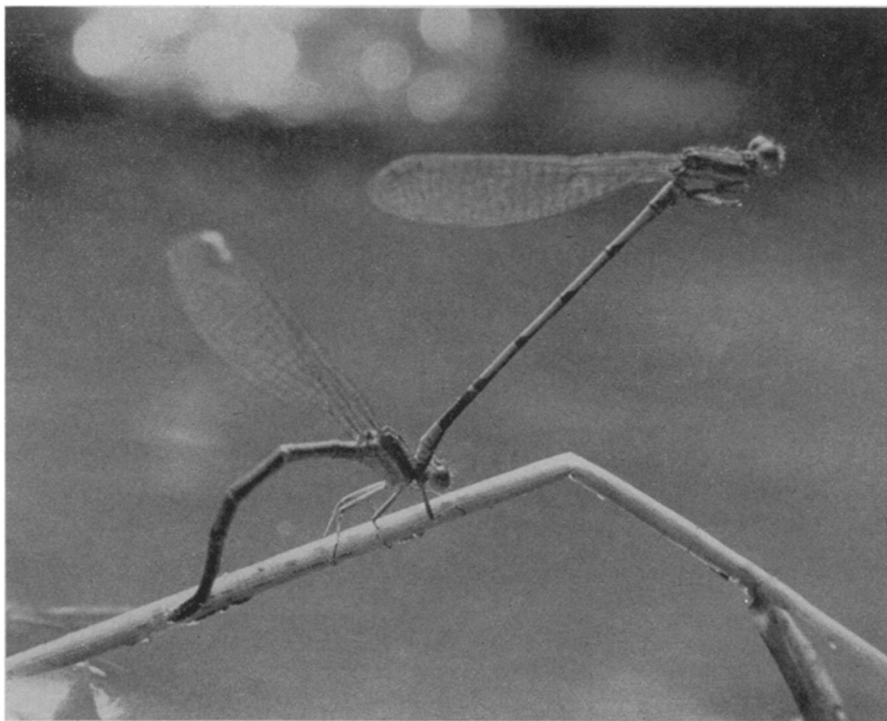
The bumblebee shown on the cover of this week's SCIENCE NEWS LETTER was "shot" while in the midst of winning the day's bread. I bagged him at 1/100th of a second at f/16 with a Rectaflex, using a two-inch extension tube on my camera to give a four-inch distance between the lens and the film. This makes the subject on the film equal in size to the original.

This in no way solves all the problems, however. For the more you close down the diaphragm in the lens, the longer the shutter speed must be to get enough light into the camera for the proper exposure.

Movement Is Problem

The longer the exposure, 1/25th of a second for instance, the more chance of movement during the taking of the picture. This is why steady hands and a comfortable position is so important to the small game photographer-hunter. Movement is much more apparent in close-up photography than it is when you take a picture of the family.

For free hand, natural game hunting, I use the fastest film I have, Tri-X. This permits me to shoot at about 1/100 of a second with the lens set at f/16 on well-



OUT ON A LIMB — *These mating Damsel-flies are part of a day's "bag" for Fremont Davis, Science Service Staff Photographer, who "shoots" small game in his own back yard and mounts them in his trophy book. These insects were "caught" at one-fiftieth of a second at f/16 with a Rectaflex.*



MR. SPIDER—*This harum-scarum looking fisher spider was snared on film by Fremont Davis, Science Service Staff Photographer, to illustrate how small game hunting with a camera can be exciting. The spider was "caught" at one-fiftieth of a second at f/16 with a Rectaflex.*

lighted subjects.

This, obviously, is the simplest method of small game hunting with a camera. Therefore, it is advisable to take several pictures of any one good subject for the chances of a perfect shot are not as high as they could be. The insect may very well disregard your breathless cry of "Hold it!"

Poor focus and movement take their toll of negatives.

But taking pictures is not the only fascinating part of small game hunting. Equally as important is the world in which you do the hunting. A world very much alive that suddenly unfolds before your eyes as well as the camera eye. There is bound to be a surprise each time you look at the animals and insects and their habits and ways.

No Need to Nature-Fake

The real actions of the insect world are so exciting there is no need to nature-fake. Be a good hunter. Shoot only from natural life and disregard posing and other tricks.

Although using tricks is against the code of the best small game camera hunters, there is a legitimate and very much accepted way of making the game hunting a little easier.

Just as big game hunters use larger and better weapons to be more effective, so can the camera fan use similar equipment in his own arsenal to get better pictures.

The big problem of getting a fast exposure to cut down on the motion factor

and, at the same time, permit enough light to fall on the film to make the picture with a small lens opening, can be solved. The secret is the use of the high-speed electronic flash now so widely used. This allows an exposure of about one-thousandth of a second duration with the lens open to a very small aperture.

You will still have to crawl on your hands and knees and take the same great care with the camera, but the average of good negatives in your game bag will increase.

Still better pictures can be had with a lens that will show the detail better. These are the photomacrographic lenses such as the microtessars. They are specifically designed for use at short distances, such as we have been discussing.

Color photographs are not much more difficult to take in small game hunting than are black and white. The lens opening in most cases will have to be larger but the vivid colors will make the results much more exciting.

The only way to get the proper exposure for each picture is to make some test shots. You must "sight in" your equipment in much the same manner big game hunters calibrate their rifles for accuracy.

Other tricks in stalking and shooting will come naturally. As an example of what I mean, I found that it was more comfortable to float around the edge of a pool in a rubber tube and in a bathing suit. This permitted me to rest my elbows for steadiness. And it was cool.

Science News Letter, September 1, 1956

NUTRITION

Secrets of Making Tasty French Fries

► IF FRENCH FRIES turn out grease-soaked, dark-brown and scorched-tasting, it could be they originally had a low specific gravity, U. S. Department of Agriculture experts report.

Tests with potatoes from Maine to Washington show that just about everything from fat to field has an effect on the final French fry, but one of the most important factors is the potato's specific gravity.

Potatoes of high specific gravity, those that are heaviest for their size, make the best French fries.

Other factors the USDA scientists found that play a part in making tasty, crisp and golden-brown French fries are:

1. Storage temperature, recommended at 50, 55 and 60 degrees Fahrenheit to retard sugar accumulation.
2. Quick washing of pared or sliced potatoes rather than a ten-minute soaking to remove surface starch.
3. An eight-to-one weight ratio of fat to cut potatoes.
4. Par-frying at 360 degrees Fahrenheit and finishing off at 375 degrees Fahrenheit.

They found newly harvested, par-fried potatoes could be kept in freezer storage at zero degrees Fahrenheit for up to nine months "and be as tasty and tender as freshly prepared French fries."

Science News Letter, September 1, 1956

GENERAL SCIENCE

See Help for Disabled Workers in Automation

► AUTOMATION may prove a boon to workers so disabled they cannot operate heavy machinery or perform other jobs requiring physical strength.

Their technical ability, however, might be developed so that they could operate increasingly complex machinery that required little or no physical strength.

Research on the problem will be undertaken by the Human Resources Corporation of New York with the aid of a \$60,313 grant from the U. S. Office of Vocational Rehabilitation.

Blind farmers, both farm owners and tenants, will be rehabilitated, along with their farms, in another Federally-aided program sponsored by the Alabama Institute for the Deaf and Blind.

In California still another Federally-aided rehabilitation project calls for establishment of a half-way house to give a home to men discharged from the state mental hospital and who are gradually returning to work situations. The half-way house is expected to help them make the change from the hospital to normal living again.

Grants totalling \$540,923 for 19 such research and demonstration projects in rehabilitation were awarded.

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