By courtesy High Commissioner for New Zealand

A BLACK MARLIN LEAPING

THE SPEED OF AND

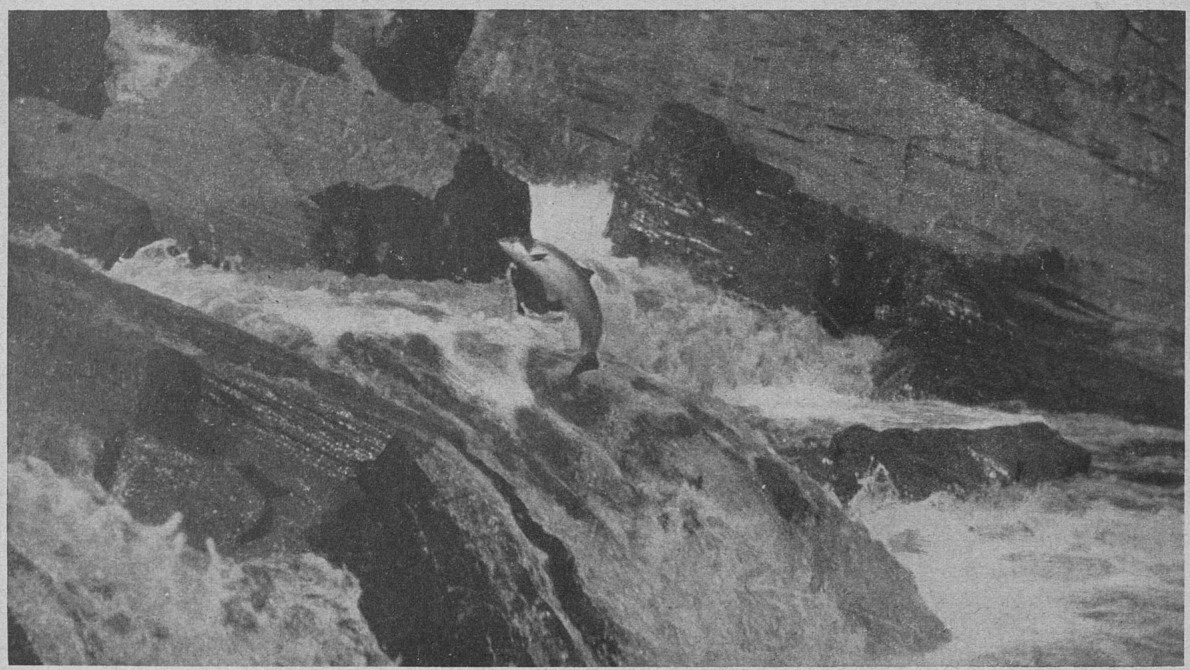
Cheetahs travelling at 80 m.p

By F

My friend Eric Hosking has told me how he once watched a peregrine stoop on a pigeon, knock its head off, recover and then catch the body before it touched the ground. As to its speed . . . an aviator has recorded that when he once made a nose-dive at some ducks his speedometer was registering 170 m.p.h., but a bird (which appears to have been an American peregrine) passed him "as though the plane were standing still." And using the stop-watch method of timing, a speed of between 165 and 180 m.p.h. has been recorded.

Timing the speed of a bird is comparatively easy to obtaining accurate figures for the speed of a fish. But patient investigators have succeeded in obtaining data which have enabled tables to be drawn up, listing upwards of 60 speeds for different species of fish. One of the most thorough of all these investigators was a French professor, named Magnan. One of his timing methods sounds like a Heath Robinson nightmare, but at least it *worked*. I feel that this method is sufficiently interesting to describe in detail. Here it is, in a free translation from the professor's own description.

"In the case of species which it is not possible to observe in their natural habitat, I have harnessed specimens to a delicate speed indicator. It is composed of a pulley mounted on ball bearings on a horizontal axis. The frame bearing this pulley is itself made to move round a vertical axis supported on ball bearings. A thread of very fine, but strong, silk being wound round the pulley, its free end is attached to the fish and the whole apparatus adjusted to allow the fish to pull



ON THE WAY TO THE SPAWNING BEDS, A MAGNIFICENT PHOTOGRAPH OF A LEAPING SALMON

An ingenious experiment was once carried out to find the pace of a game bird shortly after it had risen from the feet of the guns. In a covered range, birds were made to fly 40yds. and then pass through two screens made of very fine invisible cotton. The time taken was recorded by electrical chronograph, and then the speed was worked out into m.p.h. By this method it was found that partridges and pheasants, just after being flushed, attain a speed of about 30 m.p.h., the heavier bird being slightly the faster.

When going full out, however, these speeds are nearly doubled—at least for birds in their prime and maybe with a wind in their tails. Records I have indicate that a partridge has clocked 53 and a pheasant 60 m.p.h. The latter figure is also generally conceded to be about the maximum a grouse can attain.

Although many an irate gun, just after a bad miss, will swear that his bird was doing "an easy hundred," it is an indisputable fact that very few birds ever reach this speed. I have been collecting bird speed records for years, yet I do not remember ever having come across a reliable record of a game bird topping the hundred mark. A canvas-back duck has been timed by aeroplane speedometer to do 72 m.p.h., and an eider duck has been proved to be able to fly in the teeth of a 90 m.p.h. gale, but it is only such birds as falcons, swallows and swifts which can be expected to do more than 100 m.p.h. It is true that a very reliable observer, working with ordnance survey maps and a stop-watch, proved that a golden eagle flew at 120 m.p.h., but he had two peregrines stooping at him !

One of the most remarkable speed records for a game bird has been given by H. Mortimer Batten. He was driving a car across a moorland road when he saw that a snipe was circling the car as it went along. When the speed of the car was increased, the snipe still continued its circling. Finally, the speedometer was registering 60 m.p.h., but still the game bird (in more senses than one !) continued its circling movement. A mathematical friend informs me that it is an error to assume that the actual speed of the snipe was greatly in excess of the car, but at least that snipe must have been carrying out its aerial manœuvres at nearly 70 m.p.h.

Few who have been privileged to watch a peregrine falcon disporting itself will ever forget the sight. I suppose it is the most spectacular bird in Britain and one of the most marvellous flyers in the world.

horizontally on the thread. Beside the large pulley there is another smaller wooden pulley on which is mounted a brake, for the purpose of determining the amount of "traction" exerted by the fish. The fish unwinds the thread from the large pulley, which revolves, actuating a Deprez signal (a sensitive relay) once every revolution, which determines the number of revolutions made and the distance traversed. The time is also checked carefully, and a simple calculation gives the speed at which the fish has travelled."

The curious reader can refer to the speeds which Magnan obtained in the *Annales des Sciences Naturelles*, volumes 12 and 13.

ME BIRDS, FISH MMALS

Peregrines diving at 170 m.p.h.

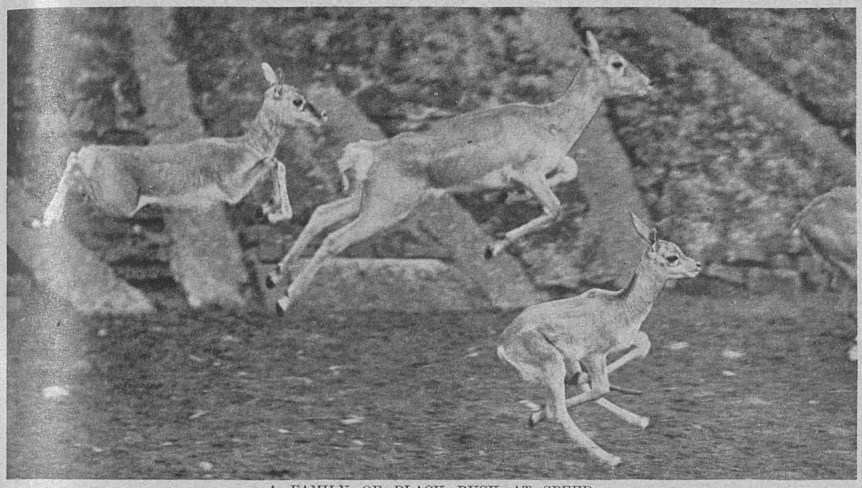
. LANE

A compatriot of Magnan, Inspector Krietman, of the French Department of Waters and Forests, once carried out some fish speed trials on the river Vienne. It is of interest to note that of all the fish timed the salmon was an easy first. It tore down the watery speedway at a speed of eight metres per second or 18 m.p.h.

But it would, I think, be a mistake to imagine that this is the maximum of which a salmon is capable. Calculations, based on the height to which a salmon can leap when ascending dams, etc., indicate that its under-water speed must, at times, be about 22 m.p.h. And Ernest Protheroe puts its maximum speed even higher than this. He writes : "No current is rapid enough to daunt it ; it can dart along at a rate of 30 m.p.h., easily surmounting obstacles such as falls, by leaps of 10 and 15 feet." The merit of such a performance will be the more easily appreciated when it is remembered that the maximum speed of a submarine under water is about 15 knots or under 20 m.p.h.

Zeiss Ikon photograph

MARSH HARRIER RETURNING TO THE NEST WITH FOOD

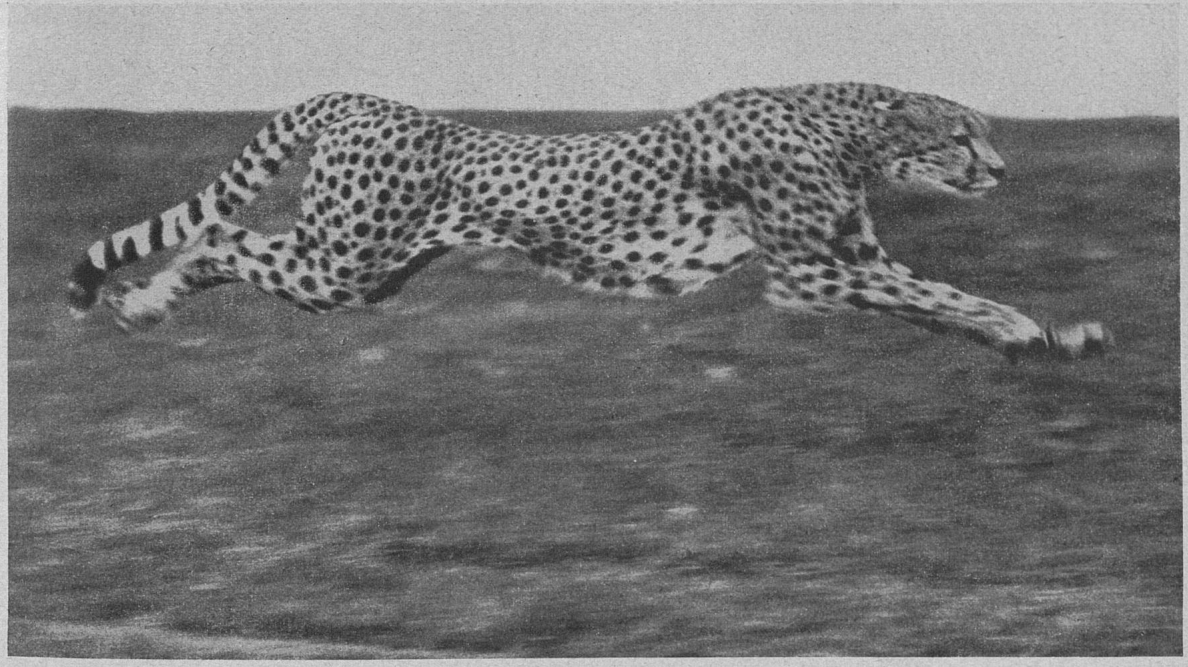


A FAMILY OF BLACK BUCK AT SPEED

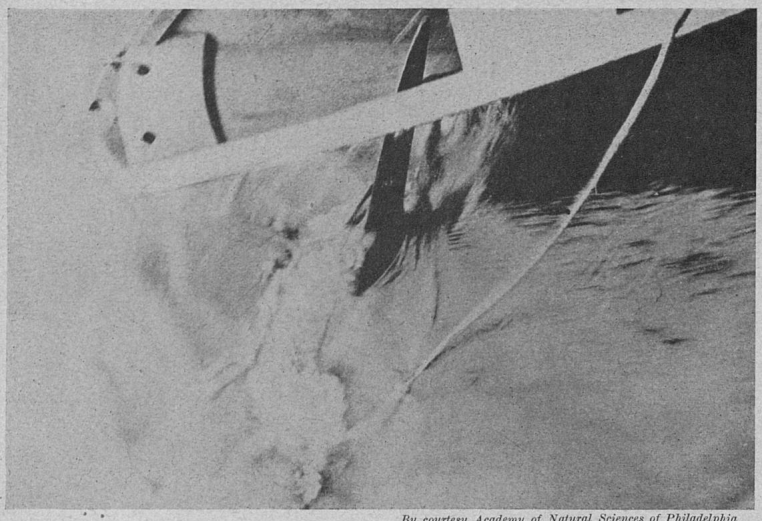
The trout is not much behind the salmon—if, indeed, it is behind it at all. A patient German investigator, using the electrical stop-watch method of timing, once succeeded in timing a trout at 22 m.p.h. A truly remarkable speed for a comparatively small fish.

According to the late Zane Grey, surely one of the world's very greatest big game fishermen, it is another comparatively small fish, the American bonefish, which holds the piscatorial speed record. On one occasion Grey was angling in waders in shallow water when he hooked one of these miniature torpedoes. It darted away with such speed that he feared the line would break. To ease the strain he commenced to run in the same direction as the fish. He covered 50ft. while the bonefish took 400ft. of line. If we assume that he ran at only 5 m.p.h., that gives a speed for the bonefish of some 40 m.p.h. !

But I think most experienced anglers, and those who have studied the fascinating subject of the speed of fish, will agree that the real holders of Nature's water speed records are the big game fish. Writing to me of the tunny, Victor Hey, of Scarborough, says : "I should say they certainly rush at 40 m.p.h. and I have old fishermen's support in this." The American wahoo has been *timed* (not



A CHEETAH AT SPEED. THE FASTEST MAMMAL IN THE WORLD WITH AN ACCELERATION TO 45 M.P.H. IN TWO SECONDS



By courtesy Academy of Natural Sciences of Philadelphia

A SWORDFISH CHARGING A BOAT
This is believed to be the only photograph in the world taken of a swordfish in this act

a calculated speed) at 37.2 m.p.h. On this particular occasion it ran out 200yds. of line in 11 seconds dead. No wonder Van Campen Heilner says of these fish: "I believe they could run circles around a speed boat." Tarpon, those mighty leapers, probably have an underwater speed of 35 m.p.h. on occasions. When the late Lord Northcliffe was preparing for an attack on these "silver kings," he was warned by an old American angler to remember "that you may expect to hook something like a 30-knot torpedo-boat."

But I think it is the swordfish family which are the real holders of the Blue Riband. Many stories have been told of what happens when one of these ocean gladiators goes full tilt into a wooden ship. Here is one of the most remarkable records. A wooden ship, named *The Fortune*, was once hit with prodigious force by a big swordfish. The sword pierced the copper sheathing, an inch of under-sheathing and a 3in. plank of hard wood. Continuing its journey of investigation, the fish then poked its nose through 12in. of white oak timber and a hard oak ceiling 2½in. thick. An oil cask then barred its way. Into this its sword went at full speed and then broke off, thus forming a convenient bung for the hole it had bored. Although the weapon of a swordfish is solid and hard as ivory, it is by no means so strong that it could by ordinary means be forced through some 20in. of hard wood sheathed with copper. It has been claimed that the fact of clean penetration implies a speed, at the moment of impact, of not less than 60 m.p.h.

Until the advent of the motor car and motor cycle with their attendant speedometers comparatively little was known of the speeds of mammals. Thanks, however, to the many motorists and motor cyclists who have put on record encounters they have had with wild beasts, while speeding along the highways of the world, there is to-day a large body of evidence concerning the speeds of mammals while being paced (or chased!) by mechanical vehicles.

The reason why so many wild animal speed records have been obtained in this way is not far to seek. It is very seldom that an animal in its native haunts can be induced to go "all out" over a known distance when the timekeeper is ready and waiting. Yet on at least one occasion the speed of a beast in the jungle was timed under these ideal conditions.

One of the old-time big game hunters and a friend with a stop-watch once came upon a large young bull elephant standing at the end of a clearing. To ensure that the bull should travel at its maximum pace a shot was fired in the air. The elephant tore down the length of the clearing and disappeared in the bush. The stop-watch reading was 10 seconds dead; the carefully measured distance was 120yds.; —the bull had clocked 24 m.p.h. That other heavyweight, the rhino, is considerably faster. Colonel Marcuswell Maxwell managed to induce one of these rather ill-tempered gentlemen to chase him in his car. He found that the rhino kept up a speed of 28 m.p.h. for a quarter of a mile. On another occasion, however, Maxwell paced a female, and the speedometer then registered 35 m.p.h., although the chase was over ground with a slight decline.

By courtesy Director Australian Trade Publicity

A KANGAROO AT SPEED

It is to the more medium weights among game animals that one must turn to find Nature's finest sprinters. According to a number of competent judges, the full-blooded charge of an uninjured lion is in the region of 50 m.p.h. But, for sheer lightning speed from a standing start, I should imagine that super-gymnast the leopard is the master of the lion.

The two fastest mammals in the world are the Mongolian antelope and the cheetah. Roy Chapman Andrews, of the American Museum of Natural History, once chased, by car, a herd of antelope across the Gobi desert. Andrews wrote: "They ran so fast that we could not see their legs, any more than you can see the blades of an electric fan. We found they would leg it at 60 m.p.h. for about two miles, and then slow down to 40 or 50." Sixty m.p.h. for two miles is, in my opinion, the greatest feat of sustained speed of which any wild animal is capable.

The fastest mammal over a short distance is, without doubt, the cheetah. Stop-watch timing gives a speed for this wonderful animal of 103ft. per second—or 70 m.p.h. And it is claimed that the acceleration of a cheetah is 45 m.p.h. in *two* seconds! But it is quite possible that the absolute maximum of a prime cheetah is in excess of even 70 m.p.h. It is well-known that these animals are employed to hunt down black buck. The speed of a buck is certainly 50 m.p.h., and quite probably more. (I have spoken to a man who chased them in an aeroplane and found that an air speed of 70 m.p.h. was only just too fast for them.) But a cheetah can bring down a buck even when the buck has a big start in a quarter-mile race. Calculating from this, it appears that the speed of the cheetah must approach, at times, 80 m.p.h. No wonder its fur is streamlined and it has a long heavy tail to help it round corners.

COURSING DOGS OF THE ARABS

By A. CROXTON SMITH

ONE of those clever men who know a little bit about everything and very little about anything once remarked in a club that one long dog was very much like another. As a matter of fact, the various members of the greyhound family could not very well be mistaken for one another. In remote times they may have come from the same taproot, but that is quite a long while ago. Some people consider that this taproot was the Saluki, the coursing dog of the Arabs, and others put in a word for the Afghan hound, who is said by his native breeders to have come out of the Ark.

We did not know much about the Salukis until the Hon. Florence Amherst began to import them a few years after the opening of this century, although British travellers and sportsmen must have met them on their native desert. As we know, Mohammedans regard dogs as unclean things, not to be touched, but Salukis come in a different category—they are hounds and not dogs. In his monumental work *Arabia Deserta*, C. M. Doughty shows us in graphic manner the difference between the two. The little Saluki whelps—he called them greyhounds—with lambs, kids, and camel calves less than five days old, are laid by the women upon burden camels when they are on the move. "A few Bedouins have their greyhounds, light with hunger, and very swift to course the hare; and by these the gazelle fawn is taken." Modern testimony to the esteem in which Salukis are held is furnished by Carl R. Raswan in *The Black Tents of Arabia*. "The true Bedouin would not dare, even as an experiment, to ride on an ass, or touch a dog other than a Saluki; which are considered Asil (noble) like the pure-bred horses."

Salukis can get over the ground at a good pace, but I doubt if one could catch a full-grown gazelle without the aid of a falcon. On one move Doughty saw many falcons carried by the thelul (dromedary), and some Bedouins put their greyhounds upon a camel's back lest the burning sand should scald their tender feet. As a protection against the sand the feet of the Salukis are well feathered between the toes. During the Great War Brigadier-General F. F. Lance, when on service in Syria, had good sport with these dogs, some of which he brought home with him. From them we learnt that the size differs a good deal according to locality. General Lance's were much bigger than any of Miss Amherst's that we had seen, and some were black-and-tan or tricolour, which was also new to us. Ch. Sarona Kelb was not only a fine Saluki but he was a great dog in any company, and there is no doubt that his presence at shows did much towards establishing the breed in this country.

Salukis cannot fail to impress by their graceful outlines and beauty of colourings. Anyone with an eye for a dog realises that the Arabs must have bred them with great care for many generations, and they look the aristocrats that they are. They have stamina as well as speed, and a fair amount of coursing has been done with them. Probably they are not as fast as the English greyhound over a moderate distance, but in a gruelling and long course they may be expected to score.