

# • New Machines and Gadgets •

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⚙️ **ALUMINIZED CAPS** for golfers, outdoorsmen and ball-players reflect the sun's heat. Laboratory tests are said to have shown that the caps keep heads up to 20% cooler. The thin layer of aluminum does not add materially to the weight of the cap.

Science News Letter, August 24, 1957

⚙️ **PAN HOLDER** eliminates the need for a permanent pan on camping trips. Pie-plate-like fillers are used for cooking and then thrown away. The holder takes disposable plates measuring ten inches in diameter.

Science News Letter, August 24, 1957

⚙️ **ANTI-JACKKNIFE DEVICE** for tractor-trailers is said to be a mechanical invention that not only prevents "jackknifing," but keeps trailers from breaking away from the towing vehicle. Independent of the driver, the device is automatic. It can be mounted by welding or bolting and is interchangeable.

Science News Letter, August 24, 1957

⚙️ **RAIN SCARF** made of plastic can be folded to fit in pocket or purse. Styled to cover shoulder-length hair-dos, the scarf, shown in the photograph, is provided with a snap fastener. The plastic is resistant to



most chemicals, weather, water and mildew. A brim can be fastened to the rest of the scarf. The scarf comes in a pack-away pouch.

Science News Letter, August 24, 1957

⚙️ **TOY RACER** is equipped with a finely engineered .049 engine. An automatic clutch allows the car to be placed on the

ground with the engine running. The racer holds enough fuel for 12 minutes track time. The 10¼-inch model is made to scale.

Science News Letter, August 24, 1957

⚙️ **COMPOST MAKER** is described as capable of turning out 5,000 pounds of compost yearly. Leaves, weed clippings and other material is placed in the top of the wood and metal composter and the finished compost is shaken out the bottom.

Science News Letter, August 24, 1957

⚙️ **TROPICALIZED URANIUM DETECTOR** is a British development designed to be mounted on a small vehicle, but the driver can take the scintillation probe with him. The probe is described as sensitive enough to pick up a change of plus or minus .0005% in .003% radioactive ore in bed-rock.

Science News Letter, August 24, 1957

⚙️ **DUST COLLECTOR**, described as one-tenth to one-twentieth the size of comparable equipment, weighs 2,500 pounds. The collector can catch particles one five-thousandth of an inch in size. A two-part device essentially, it has a mixer section and an eliminator section. The collector is designed for industrial use.

Science News Letter, August 24, 1957



## Nature Ramblings



By HORACE LOFTIN

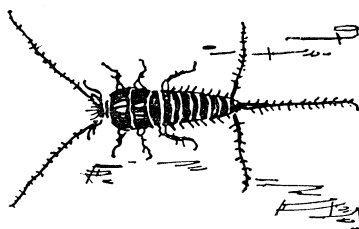
➤ IN ALL the animal kingdom, only three major groups show true, functional wings—birds, mammals and insects. Fossil remains of flying reptiles, the pterodactyls, are well-known, but these creatures perished countless ages ago.

Among the mammals only the bats are winged. On the other hand, there are no wingless birds, although there are many flightless ones like the ostrich. But for variety of winged and wingless condition the insects are champions.

In the first place, no insect has functional wings until it is grown or nearly so.

There are also several groups of insects that never show signs of wings at any stage of their life history. Such an insect is the familiar silver fish, shown in the picture. Studies of fossils of the ancestors of these insects have failed to disclose the presence of even vestigial wings.

### Winged and Wingless



Still other groups of insects, such as the fleas and lice and some of the aphids and ants, do not have wings; however, these are "degenerate," for their ancestors were winged.

Some ants and termites illustrate another variation. These soil-dwelling insects may display a beautiful pair of wings which take them on a single mating flight. But after this momentary release, they lose their wings to spend the rests of their days in and on the earth.

Of course, the beautiful and effective wings of the great majority of the insect tribe are well-known, although they range from the covered and folded wings of beetles to the great appendages of tropical moths and butterflies. Some of the moths may have a wingspread of 11 inches. At the other end of the scale, certain parasitic insects barely reach 1/100 of an inch in wingspread.

Insect wings originate as hollow sacs that protrude from the body wall of the undeveloped young. When the last metamorphosis or body change occurs, the sac enlarges and then flattens so that the two walls form a single tough membrane.

In certain areas, the walls do not fuse but thicken to form strong hollow tubes—the veins. These have nothing to do with blood circulation, but are for support. Insect wings contain no bones, muscles, feathers, nerves or blood vessels.

Science News Letter, August 24, 1957