**SCIENCE TREK INSECTS PROGRAM 1702 – WEB SHOW**

(MUSIC)

JOAN Cartan-hansen: Hi, I’m Joan Cartan-hansen. And welcome to Science Trek: The Web Show, and welcome to the Orma J. Smith Museum of Natural History here at the College of Idaho. And joining us now to answer your questions about insects are Bill Clark and Alan Gillogly. Thanks for being here.

CLARK: Thanks for having us on your program.

GILLOGLY: It’s a pleasure to be here.

Cartan-hansen: Okay let’s go to your questions.

(MUSIC)

LANE: Hi my name is LANE, I go to Challis Elementary, my question is do insects have hard shells?

GILLOGLY: All insects have exoskeletons made of CHITIN, but CHITIN can be either hard or soft. So some insects have actually very soft, soft skins, for example insects that would live in something soft like a mushroom or rotting fruit wouldn’t have to have a very hard exoskeleton that something that lives under rocks would have.

MaxIMO: Hi my name is MaxIMO and I go to Cynthia Mann Elementary School. My question is, what is the biggest insect in the world?

CLARK: Well to define biggest insect in the world we’d probably have to figure out what criteria we want to use and I think we use wingspan for that, the largest wingspan I think known for insects would be about 28 inches for a fossil dragonfly. If you want to focus on insects which are extend or alive now it would be the White Witch Moth which has a wing span of about twelve inches.

Ryan: Hi my name is Ryan and I’d like to know how to stink bugs produce their stink?

GILLOGLY: Stink bugs and many other true bugs have scent glands either on the thorax or on the abdomen or both. They, these organs produce the nasty smelling chemical and it’s used as a, usually as a protective, to protect the insect against predators or maybe also to attract other insects of the same species. This is a really interesting field of Entomology, we know very little about the chemicals, all the chemicals that are used by insects and its certain that in the future we’re going to be finding a lot of interesting chemicals, new uses and some of those may even be useful to humans like in medicine.

Cartan-hansen: Matthew would like to know, “What are mandibles made of?”

CLARK: Well mandibles are made of CHITIN and they’re really, really heavy duty strong form of CHITIN, probably some of the best examples are on beetles, maybe some of the stag beetles that have just huge mandibles and can actually pierce a person’s finger. There are other large tropical beetles that they’re mandibles are strong enough that they can actually snap a pencil in half.

Caden: Hi my name is Caden, I go to Cynthia Mann Elementary School and my question is, how many eggs do some insects lay each year?

GILLOGLY: There’s a species of moth that’s actually been measured, the number of eggs have been measured and the total was about 44,000 that had just been laid or were still inside the body of the female. But the largest number of eggs is probably produced by termite queens like the termites that live in mounds in Africa. There was a report published just this year that three queens that were captured from three different mounds in Africa were checked for the number of eggs that they could produce over a period of several days, the average was about 25 eggs per minute. That works out to about 36,000 eggs per day and that would be about 13 million eggs per year.

Cartan-hansen: TorIA would like to know, “What are sensilla and what are they used for?”

GILLOGLY: Sensilla are sensory organs that can be either imbedded in the exoskeleton or stick out of the exoskeleton like, like hairs. They communicate what they’re sensing using nerves and they use those, these sensilla to monitor the environment. There are mechanical sensilla that detect changes in the exoskeleton like bending or twisting, there are chemical sensilla that can detect different types of chemicals like the, like our sense of taste and smell. And then there are temperature sensilla that are, that do exactly what that sounds like they monitor and report temperature.

Cartan-hansen: Mason would like to know, “How many insects are there?”

CLARK: Well that’s another tough question, and one that would have to be considered an estimate. It’s a dynamic situation in that insects are constantly giving birth and dying, but a commonly used estimate is ten quintillion, which is about one followED by nineteen zeros.

Cartan-hansen: JArom asks, “Does the word insect mean anything?”

CLARK: Well the word insect is actually derived from the Latin and it refers to divided and we believe that that means that they’re divided body parts, divisions between the head, thorax and abdomen of an insect.

JerrEn: Hi my name is JerrEN and I go to Cynthia Mann Elementary School and my question is, why do all insects have six legs?

GILLOGLY: Far back in time, insects were all related and the first insects had six legs so that’s the basic, basic plan for insects. Over the millions of years though many, many species have developed, some of those have, like caterpillars extra legs, and others have no legs at all. But the vast majority of insects have six legs.

Cartan-hansen: I’m sorry we’ve run out of time. My thanks to Bill and Alan for answering questions today.

CLARK: Thanks so much for having us on your program.

GILLOGLY: Thank you it’s been very interesting.

Cartan-hansen: My thanks also to the folks here at the Orma J. Smith Museum of Natural History at the College of Idaho for hosting us. If you want to learn more, check out the insect area on the Science Trek website. You’ll find facts, links, games, our insect broadcast show and lots more. And every week check out my blog for the latest science news for kids. All at idahoptv.org. Thanks for joining us we’ll see you next time on Science Trek: The Web Show.

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