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THE PROBE



National Animal Damage Control Association

APRIL 1988

NUMBER 82

RODENTICIDE UPDATE

REX MARSH (Univ. Calif. - Davis) has very generously provided me with an advance copy of a paper of his that is to be published in the BULLETIN OF THE SOCIETY OF VECTOR ECOLOGISTS. This is an authoritative review of what's new in this area.

There is currently available a diverse selection of excellent rodenticides for commensal rodent control which is undeniably the most important area in ADC. While we have lost several rodenticides over the past few years, there is a better array of relatively safe and effective rodenticides available than at any time in the past. The anticoagulant group continues to dominate toxicants used in commensal rodent control. Two new second-generation chemicals, bromadiolone (MAKI, CONTRAC) and brodifacoum (TALON, HAVOC), along with the older difenacoum (NEOSOREXA, RATAK), have shown to be effective against warfarin-resistant rodents which development at one time aroused widespread apprehension on the continued use of anticoagulants. Unlike the older anticoagulants these newer ones are considerably more toxic requiring only a single feeding.

Flocoumafen (STORM) and difethialone are the two latest chemicals to join the second-generation anticoagulants. Flocoumafen is being marketed principally as a wax block in the other parts of the world, but has not yet appeared in this country. Difethialone (Chempar Chem.

Chem. Co.) is being tested for registration which will mean at least two more years before it is available.

REX sounds a note of alarm that one of the older anticoagulants (fumarin) will probably be taken off the market due to EPA's more stringent registration requirements. While this will not have a significant impact, fumarin, warfarin, and PIVAL are the safest of all anticoagulants for dogs. The loss of one probably means the eventual loss of the others. As there is indication that resistance is becoming evident in difenacoum and possibly bromadiolone, the specter of rodents resistant to these even more toxic anticoagulants remains a possibility. Thus REX advises continuing to use first-generation anticoagulants as long as they give good control, switching to second-generation where resistant is suspected. If you are currently using second-generation anticoagulants as probably many PCOs are, occasionally switch to the non-anticoagulants for a month of maintenance baiting to break the resistance development.

Recent developments have not been limited to anticoagulants. It used to be we could classify rodenticides into chronic and acute with the anticoagulants being classed as chronic as they required repeat feedings. The line between these two has now been eliminated so that the best grouping seems to be "anticoagulants" and "non-anticoagulants." Though the

search for non-anticoagulants has still continued. These with entirely different modes of action are the obvious solution to the combat of resistance. Among these newer chemicals are cholecalciferol (QUINTOX, RAMPAGE), bromethalin (VENGEANCE, ASSAULT), alpha-chlorohydrin (EPIBLOC), and stabilized red squill (SILMURIN).

Cholecalciferol mobilizes calcium from the bones into the blood stream eventually causing death in 3-4 days by calcification of the blood vessels. It reportedly has no secondary poisoning effect.

Bromethalin reportedly uncouples oxidative phosphorylation in the mitochondria leading to decreased production of energy and fluid buildup that increases pressure on nerve axons interrupting impulse conduction. It too takes 2-4 days to kill but again no secondary hazard to predators has been found to date.

Alpha-chlorohydrin is a unique chemosterilant/toxicant. At low doses it produces temporary sterility, but at higher doses permanent sterility in male Norway rats. At even higher doses, it is lethal to both males and females of rats and a number of field rodents. This approach can be best adapted to rat-infested sewer systems and agricultural crops where a few rodents can be tolerated.

Red squill was an ancient plant-derived toxicant that had to be imported. The toxic glycoside, scilliroside, has been synthesized and is marketed in Europe but attempts towards registration in this country have not gone very far. Recent progress in plant breeding and propagation of the squill bulb in the Southwest have uncovered other components that are tasteless and equally as toxic as scilliroside so we may see a revived interest in this rodenticide.

Flupropadine was discovered recently in a routine laboratory screening for rodenticidal activity. It appeared to have considerable promise against Norway rats and house mice. Its mode of action

is being investigated. It will undoubtedly appear in Europe long before it comes into use in this country.

A taxpayer is one who doesn't have to take a civil service exam to work for the government.

SPEAKING OF RESISTANCE

BILL JACKSON sent me a reprint of a recent publication (OVERVIEW OF ANTICOAGULANT RODENTICIDE USAGE AND RESISTANCE. (1988) WILLIAM B. JACKSON, A.D.Ashton, & K.Delventhal. in "Current Advances in Vitamin K Research" J.W.Suttie (ed) Elsevier Sci. Publ.)

He points out once a rodent population has been selected for resistance it is not going to go away. An example is Chicago where test animals were found to be highly resistant. Nearly ten years after first-generation anticoagulants were supposedly no longer used there, 87% of the sample still tested resistant to Warfarin. Brodifacoum is expected to be the least likely to select for resistance and none have been found so far, but the high level of warfarin-resistance remaining in areas treated with brodifacoum for seven years is worrisome.

For every silver lining, there's got to be a cloud.

APHIS ACTIVITY REPT.

The following are abstracted from the activity reports of APHIS, TRAPLINE (TX), TRAPPER'S JAW (NM), etc. for the benefit of non-APHIS readers. This is not to be considered a publication source. Only names of NADCA members are used in situations in which they are involved.

EAGLES : (NM) Golden eagles roosting near a lambing shed in Grant County do not pay much attention to whistle bombs but the cracker shells do catch their attention.

FISH : (LA) EUGENE LEBOUF writes: "Amidst all the madness of low budgets and high anxiety computerism, a message was left on the office phone recorder. At first I thought, now how do you like that, some nice lady out there wants to talk about dipnet numbers. Well now, I

think to myself as I lean back in the squeaking office chair, I like a 1/8" mesh dip net for minnows and grass shrimp and a 2" mesh for crabbing. Thinking how nice a break this will be to talk to this woman, I hurry to dial the number. Wouldn't you know, all she wanted to talk about was some DEPNET number so that I could go back to that computer and play with a very dismal set of numbers!"

All things come to those who wait, but by the time they get there they're out of date.

LIFE'S PLEASURES AFTER FORTY

Artifacts saved from childhood sell as valuable 'antiques'.

It's safe to assume no one will ever discover who broke the gym window at Erasmus High.

The curse of the chain letter has never come to pass.

Birthday cakes require just one symbolic candle.

You no longer have to pretend high school was the best time of your life.

An earnest book on tips for teens provides hours of amusement.

The old recurring dream of finding yourself back in school has lost its terror.

You don't have to worry about what you'll be when you grow up.

Money can't buy everything. Take poverty for example.

MEETIN'S

INTERNATIONAL UNGULATE BEHAVIOR & MANAGEMENT CONF., May 1-22, 1988 at Texas A & M University. Any aspect of ungulate behavior and management. Contact: Dr. Elizabeth Mungall, 342 Double Tree Dr., Lewisville, TX 75067.

FIRST INTERNATIONAL WILDLIFE RANCHING SYMPOSIUM, May 16-21, 1988 in Las Cruces (NM). This is on operations and marketing strategies for wildlife ranching. Contact: Raul Valdez, POB 4901, NMSU, Las Cruces, NM 88003.

SECOND INTERNATIONAL SHORT COURSE IN VERTEBRATE PEST PROBLEMS AND SOLUTIONS IN DEVELOPING COUNTRIES, Aug. 14-27,

1988 at Colorado State University. Contact: Dr. Julius Nagy, Dept. Fish. & Wildl.Biol.-CSU, Ft.Collins, CO 80523.

Inflation is what we pay for free government benefits.

HOME REMEDIES - - HAZARD TO ENVIRONMENT

"Non-pesticide" control measures recommended by environmentalists as pesticide controls are breaking the law. "Federal and state regulations define pesticide as a substance or mixture of substances intended to prevent, destroy, or repel any pest. Any product sold or distributed for which oral or written claims for pest control are made should be registered and properly labeled as a pesticide." Such recommendations as sprinkling snuff over carpet and furniture for flea control, ground bugs or jalapeno peppers sprayed on plants for garden pests, and a few gallons of gasoline or boiling water for fire ant mounds lack the documentation necessary to register commercial pesticides. Closer examination of these "environmental controls" might open some eyes. Snuff contains nicotine, a very toxic substance. Would the decomposition of insect or vegetable material result in harmful bacterial contamination? What's the dermal toxicity of boiling water? A recent study shows tap water also contains chloroform, a cancer-causing agent. What is the health or environmental hazards of pouring gasoline on the ground? Requiring tests on these home remedies may seem ridiculous (so what else is new in the paranoia of today?), but it makes as much sense as making unfounded recommendations. (David Ivie in INDIANA PESTICIDE NEWS)

(Add to that list a recent columnist in our area who pushed the use of a plaster of paris and flour mixture set next to a bowl of water to kill mice and an ADE ZAJANC's note from IDAHO WILDLIFE NEWS that recommends taking bars of scented hotel soap, leaving the wrapper on, and suspending them, one per tree, in an orchard to repel deer. This is supposed to be effective for 4-5 months.)

Work is what you'd rather not.

YOU KNOW IT'S GOING TO BE A BAD DAY WHEN...

You call suicide prevention and they put you on hold...
 You put your bra on backwards and it fits better...
 You see a 60-Minute news team waiting in your office...
 Your birthday cake collapses from the weight of the candles...
 Your son tells you he wishes Anita Bryant would mind her own business...
 You want to put on the clothes you wore home from last night's party - and there aren't any...
 You turn on the news and they're showing emergency routes out of the city...
 Your twin sister forgets your birthday...
 You wake to discover your waterbed broke and then you realize you don't have a waterbed...
 Your horn goes off accidentally and remains stuck as you follow a group of Hell's Angels on the freeway...
 Your wife wakes up feeling amorous and you have a headache...

An authority is a person who can tell you more about something than you really care to know.

READIN'

THE FOX AND THE ORCHID. (1987) Robin Page. ISBS (Quiller Press) 5602 NE Hassalo St., Portland, OR 97213-3640 192pp hardcover

This is a quality printing job, beautifully illustrated. Written by an "enlightened environmentalist" it gives a picture of the sporting life in England. It favors fox hunting and is dismayed at the impact of urban mentality on the countryside. It discusses the fox, hare, deer, grouse, pheasant, and other sporting species. But what was most interesting was the similarity of England's problems with ours.

PESTICIDE USE AND TOXICOLOGY IN RELATION TO WILDLIFE: ORGANOPHOSPHORUS AND CARBAMATE COMPOUNDS. (1987) Gregory A. Smith USDI FWS Resource Publ. #170 171pp paperback

This can be obtained from the FWS in

Washington, D.C. This lists organophosphorus and carbamate chemical alphabetically under the common name. Information is given on: toxicity class, chemical name, common/trade names, commercial use, physical properties, field applications and formulations, acute oral and other toxicological tests, LD tests on various species, effects in the field on wildlife, and persistence/hazard evaluation. Looks like an excellent reference with a 296 item bibliography and the price is right

The best remedy for gray hair is total baldness.

NOT TONIGHT, DEER - I HAVE A HEADACHE

Last year in Philadelphia the first conference on contraception as a method of wildlife population control was organized by such luminaries as Cleveland Amory. And as one "expert" remarked, "Why use cave-men's methods such as hunting and trapping to control the population of animals." The discussion centered around the fact that much of the experimental work on methods of human contraception were developed on animals (tsk! tsk!). Thus much of the pharmacology should be directly transferable to wildlife species.

That was the good news. Now for the bad. Delivery systems such as surgical implants, daily oral doses, and multiple injections are not practical in treating wildlife populations. In a field study of surgical implants on deer, they were able to capture and treat only half of the does and to reach zero population growth the figure of 60-80% is bandied around. A test of implants on free-ranging horses by means of bio-degradable bullets composed of time release capsules were apparently ineffective.

An important unknown that would have to answered is what is the fate of the chemicals in the environment which EPA appears so concerned about with toxicants. Some may even (horrors!) be carcinogenic, others might change animal behavior, and still others may spoil the fun for predators in their intraspecific relationships. The general conclusion

seems to be that this concept is down the road apiece. Field tests that can be evaluated would have to be confined to closed ecosystems (islands or fenced areas) and probably with larger, more easily observed species. While the option of population control by interference with reproductive capabilities is viable for environments where the more positive lethal controls are banned, there is still the high hurdle of cost to be considered.

In this same area, I recently encountered a paper by J.E.Kirkpatrick and J.W.Turner, jr., CHEMICAL FERTILITY CONTROL AND WILDLIFE MANAGEMENT (BioScience, 35(8):485-491, 1985). This gives a good review of what has been done in the area and though the results have been generally ineffective the authors feel the approach warrants further research despite the many factors like timing, bait composition, repeated applications, behavioral changes, etc. that bear on the success or failure of an application.

LETTERS TO YE ED

JIM HEFFELFINGER, Student, Kingsville

TX:

I love the PROBE. Keep it up. Don't let too much professionalism creep into it - If I want to read technical documents I'll start at the top of Mt. Everest on my desk. I'm planning a trip in the near future to fed kittens to 'gators at the Aransas NWR, if you're interested contact me (kidding). I'm presently a grad student at Texas A & I. My thesis will address the effects of intensive coyote control on the post-rut mortality of adult buck whitetails in south Texas. It looks as though coyotes are taking older bucks after the stressful period of intense breeding activity. The ratio of 1:1 down here is conducive to fierce competition for does.

THURMAN BOOTH, APHIS, Little Rock, AR:

My dictionary says a professional is one "Having great skill or experience in a particular field or activity." You and the other leaders of NADCA certainly qualify. I appreciate your hard work on the organization and THE PROBE and all that you do to help keep us in touch

with each other. Our greatest enemies have always been the amateurs that try to close us down by dividing us and by criticism that is generated by ignorance. Lest they forget - they are dealing with the ultimate predator - a bunch of folks that have spent their entire lives trapping, poisoning, catching, scaring, and killing other vertebrates. We (like Hank Jr's Country Boy) will survive! Keep up the good fight. The only way to lose is to quit.

When it comes to giving, some folks will stop at nothing.

ALL THE NEWS THAT'S PRINT TO FIT

They never learn! Virginia which has just recently been introduced to the coyote has passed a BOUNTY law on coyotes through the State Senate by a vote of 59 - 38. Bounty amounts to be set by each county. Virginia had stopped paying bounties (on woodchucks) in 1977. Thanx to KI FAULKNER, NADCA RDVII, FALLS CHURCH, VA and WASHINGTON POST 3/1/88

In a "man bites dog" item, a man in Alaska was hauled up on a charge of eating a neighbor's cat. It seems the owner asked his neighbor to take care of his pet and her kittens while he looked for a home for them. Later the neighbor told the owner he didn't have any food in the house so he cooked up the cat. The next day they found the charred remains on the sidewalk. The neighbor said he had tried to warm it up for breakfast, but left it on the stove too long. The court said cruelty to animals was against the law, but they couldn't prosecute a man for eating a cat. (*I think that was punishment enough too.*) Thanx to JOHN MAESTRELLI, APHIS, Fair Oaks, CA and the SACRAMENTO UNION.

USDA has taken the first steps (Jan. 14 dateline) toward preparation of a new 'environmental impact statement' (EIS) for the ADC program. The last one nearly a decade ago led to a battle that finally culminated in the transfer of ADC from USDI to USDA. Signs indicate this may not be nearly so exciting. The

three "scoping" meetings produced little fireworks. Sacramento was virtually producer-oriented, Kansas City no one showed up, and Washington, D.C. where the environmentalists were supposed to have their big guns was "short and fairly balanced." It has been a long fight to move the ADC program from an unfriendly agency like Interior with its procession of Secretaries philosophically opposed to the principles of animal control to a more sympathetic one like Agriculture. "From all accounts ADC finally appears to have found a home. It is reported to be one of the more popular programs at USDA. It remains hampered, however, by the old Interior EIS with its bred-in bias against predator control. Cutting loose from that drag should give the program a boost in morale, if nothing else." LIVESTOCK WEEKLY, 01/14/88.

AND ON THE OTHER HAND -

Despite an overall budget increase of \$2.4 million for USDA ADC this year, the predator program in the western states is facing a \$1.6 million reduction that threatens to gut its effectiveness. Blame goes mostly to Congress for ordering ADC to conduct special projects without appropriating the money to pay for them (Again - so what else is new?) Such items as \$200,000 for a guard dog program and \$100,000 for taste aversion all add up to about \$3 million to be shoehorned in on an already tight budget. OMB is no friend either as it consistently recommends cutting ADC budget in half. Our friends got it back through Congress to the level it was, but in the process had to use up the chips that could have been used to upgrade the program. Then USDA mandates a cool \$1 million for this EIS study and another to update the Denver Wildlife Research Center to conform with EPA's /*&+@#^ regulatory stupidity. The upshot is that the western region's budget of \$10 million has a short fall from last year of over \$1.6 million and much of this has to come out of the present fiscal year which is now half gone. LIVESTOCK WEEKLY.

Old news that I lost in the files includes reports from a dozen of you on the coyotes who broke into the Los

Angeles Zoo and killed 48 out of a flock of 86 flamingos. Maybe now they'll declare LA a wildlife refuge for a new species of urban coyotes.



"What woman carries a python in her handbag?" was the question asked by an assault suspect when a Thailand student beat off his attack with a 6-foot snake. U.S. NEWS & WORLD REPT. 4/27/87.

Hate to be catty about movie star animal lovers, but Juliet Prowse needed 30-40 stitches to reattach her left ear when a leopard she was working with attacked her for the second time. Thank to GUY CONNOLLY and TWIN FALLS (ID) TIMES-NEWS 12/6/87

Three endangered whooping cranes as well as 13 sandhill cranes died from eating a specially-prepared feed at the FWS Patuxent Research Ctr. (DEFENDERS OF WILDLIFE, Nov/Dec 87). As MIKE FALL (APHIS, Denver, CO) remarked, "More control efforts by researchers."

The Swedes have set themselves up. The Agriculture Minister has just decreed every Swedish cow would have the right to spend some time outdoors and pigs would have roomier and more pleasant pens. (And you thought I'd been kidding about Animal Rights?!) Due to pressure from the ARs, "...Swedish animal legislation will be among the most humane in the world." Expected to be passed by the legislature and go into

effect July with a 10-year phase in, the legislation will do away with keeping hens in cages as it is bad for their "welfare", pigs will have sufficient room for separate sleeping and feeding areas, use of hormones and genetic engineering will be banned, and rules on pets and circus animals will be changed. Thank to JOHN MAESTRELLI, APHIS, and SAN FRANCISCO CHRONICLE, 12/3/87.

When you don't get what you want, console yourself by thinking of all the things you get that you don't want.

101 THINGS TO DO WITH AN INCONTINENT CAT

A columnist struck a responsive chord in me with that headline (ALBUQUERQUE TRIBUNE, 1/18/88). He had been surprised at the response from his readers (*I can't understand the problem, it could be taken care of permanently so easily.*). One solved the problem by changing from a scented kitty litter to a plain, generic brand. Another suggested putting the litter box on the spot the cat was using in the living room and then gradually inch by inch move it to the spot he wanted it (discarded as it was a 60-foot move). Somebody recommended a cat psychic. But others had some sensible solutions like the one who after trying everything keeps her cat in a cage in the backyard. The reply I liked best listed a number of options: (1) Blindfold the cat. If she wants to find the carpet, make her work for it. (2) Blindfold yourself. If you can't find the living room, then there's no problem. (3) Put a mirror over the spot where the cat goes. It may cause the cat to reflect on what she's doing. (4) Take the cat to a tennis match and warn her if she doesn't quit with the rug bit, she'll wind up in the same racquet as her dad. (5) Use the litter box yourself. It may make the cat jealous but, what the heck, it's only for 30 days. (6) Take up rug. Put down new rug. Roll up cat in old rug and put in a dumpster. and lucky (7) Get a pet for your cat. Try a pit bull.

If you don't think the dead come back to life just drop in at quitting time.

YELLOW DOG

At the California Vertebrate Pest Conference, nine little yellow dogs entered the kennel. Welcome to these NADCA members:

MEL ANDERSON
STEVE DAVIS
STEVE EBBERT
JAIME FUENTES
KIRK GUSTAV
GREG HARPER
RON JOHNSON
JIM TILL

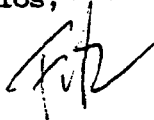
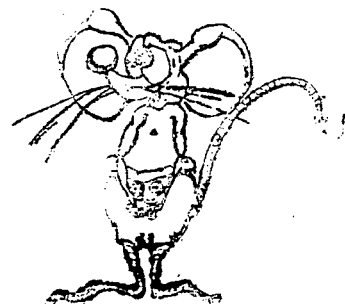
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YE ED -
William D. Fitzwater

Sorry about putting this issue on the heels of the last one, but that was delayed because of our attendance at the 13th VPC and I wanted to get this one out before the rates go up which I heard was going to be close to a 25% boost for our mail class. So this issue is a little rushed.

I'm trying to get my act together on the clippings you send in. Have developed a little better filing system so please keep them coming.

adios,

**National
Animal
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Association**



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