News & Analysis

Agribusiness Chicken Myth Dispelled

It has been claimed by poultry scientists and producers that the modern hybrid birds that are kept in battery cages are especially adapted (genetical- ly) to these conditions, so they don't really suffer. Recent research does not support such claims however. Scientists B.O. Hughes and P. Dun (in the *British Society for Veterinary Ethology Newsletter,* No. 28, March 1983) carried out a small-scale trial comparing the production and behavior of hens in outside pens with hens in battery cages. The birds outside produced on average as many eggs as those inside but they ate more food. In addition, they supplemented their diet with up to 30 g. of grass/hen/day. Mortality was similar in the two systems. There was no evidence that modern hybrids are specifically adapted to either intensive or extensive systems. *The behavioural observations suggest however that the fu II repertoire of foraging behaviour is still present.*

Tuna Fishing and Improved Monitoring of Dolphin Mortality

Nancy Lo of the National Marine Fisheries Service, P.O. Box 271, La Jolla, CA 92038, in a paper entitled "Sample size for estimating dolphin mortality associated with the tuna fishery" (/ *Wildlife Management* 47:413-421, 1983), has developed an improved statistical method for more accurately determin- ing dolphin losses. She summarizes her report:

> *"Dolphin (Stene/la spp., Delphinus de/phis) mortality caused by U.S. tuna purse seiners in the eastern tropi- cal Pacific has been monitored un- der a quota system since 1976. A stratified ratio estimator (kill-per-day] has been used to measure the kill rate during the year. Vessel trips are stratified by fishing time period. The mortality data from 1976 through 1978 suggests a sample-size procedure based on the coefficient of varia- tion rather than on the absolute var- iance of kill data. The sample size for each stratum is computed accord- ing to the desired precision of the stratum estimates rather than by al- location of a yearly sample size. The probability that the estimated mortality exceeds the quota, when in fact the quota is higher than the true mortality, is computed. This sample-size procedure is recommended for data that have a standard deviation proportional to the mean and the situation where the estimate with- in stratum is as important as the overall estimate.*

A Clear Mandate to Abolish Factory Farming

The British farm animal welfare reform magazine *Ag* (No. 71, May-June 1983) published the results of a National Opinion Poll that shows overwhelming public opposition to factory farming, ritual slaughter and export of live animals. The Poll was carried out by NOP Market Research Limited at the request of the General Election Co-ordinating Committee on Animal Protection (GECCAP) It shows clearly that the animal issues are vote-switching issues and with more concern expressed about farm animals than any other section of animal welfare.

The survey was based on a quota sample of 2,135 respondents in 107 constituencies across Great Britain. NOP was careful to sample a good "environ- mental mix", to be representative of the

whole country in terms of voting- urban, rural, age, sex, etc.

88% of the people questioned favoured the reform of factory farming conditions, with 48% *strongly* in favour of reform.

90% said that the law should be changed to give factory farm animals sufficient freedom of movement to turn round, stretch their limbs and groom themselves. This would mean banning sow stalls and tie stalls as well as veal crates.

82% said that if battery cages continue to be used, the law should be changed to ensure that the battery hens can always stretch their wings.

Only 13½ % approved of battery cages and 72% of those against, thought they should be banned by law. This can be summarised: *40%* want battery egg production banned; *15* ½ % are against cages but don't necessarily want them banned; *13* ½ % in favour of battery egg production; and*31* % had no opinion. Of the 56% that are definitely opposed to battery cages, *there was no significant difference between town and country dwellers* (which, as *Ag* emphasizes, gives the answer to agribusiness' smear campaign that a ban on battery cages is only supported by 'ignorant townies').

75% were in favour of a ban on the Live Export of farm animals. Only 14% were opposed to Parliament banning Live Exports, and once again there was little difference between town and country dwellers.

77% said that the ritual slaughter of farm animals shou ld stop- with only 12% remaining in favour of the exemptions from the human slaughter laws at present granted to certain ethnic groups.

Vote Switching

5% said that they would definitely change the party they vote for if another political party promised to introduce laws to give more protection to animals.

15% more said that they *might* switch their vote.

There is a clear indication here that the animals issue could be the deciding factor in many marginal seats. The young are seen to be more likely to change votes in this way especially the 18 to 24-year olds -11 % said they would definitely do so.

Finally, 72% are opposed to the use of snares to trap wild animals and think snares should be banned.

Relief for Iguana Lizards

Land iguanas *(Conolophus subcristatus)* have been returned to their ancestral home on Isabella Island in the Galapagos. These lizards were threatened with extinction by feral dogs on the island and several adults were removed in 1976 for captive breeding at the Dar- win station. The feral dogs responsible for the decline have now been eliminated from Cartago Bay where the lizards have been reintroduced. Of the 37 juvenile igua- nas released there last year, most have taken up residence in old iguana burrows. If the dog eradication program on the island of Santa Cruz proves as successful as the Isabella program, iguanas will be released there also.

Dogs Endanger Wolves

James Hansen writing in *New Scientist* (March 3, 1983) describes how free-roaming and feral dogs in Italy are now competing with the few wolf packs that are still surviving in that country. It is estimated that fully wild feral dogs in Italy have exploded to about 80,000 animals, this number being fueled by a pool of some ten times as many stray and free-roaming dogs. The feral dogs apparently behave much as wolves do, running in packs of up to 20 or 30 members and being active mainly at night in order to avoid humans. They prey on larger herbivores such as deer, and domesticated animals such as cattle, horses, and particularly sheep. Competition and natural selection in the wild is favoring larger breeds and their hybrids, notably setters, German shepherds, mastiffs, and the larger hunting and herding breeds. Attacks on

humans are rare because these genuinely wild dogs are aversive to human presence. However, these large packs of feral dogs are now recognized as the most serious threat to the survival of the Italian wolf, since they compete for the same food sources. The problem is compounded by the fact that wolves and dogs will interbreed. Wryly, author Han- sen concludes that the Italian wolf, which is perilously close to extinction, may survive after all as a hybrid dog. It is estimated that approximately 25% of Italy's total dog population of around 3.5 million is made up of animals which are free-ranging, if not actually stray animals. Although the Italian government has not taken such stringent measures yet as endeavoring to depopulate the feral dog population, this action may soon be taken, not primarily to save wolves, but because of the omnipresent threat of rabies which is now moving towards Italy out of Eastern Europe. If the Italian government uses poison bait as a method to control the wild dog problem, then an even greater threat to wolves and other wildlife will be created.

DES in Veal

Confinement-raised, "fancy" or "milk-fed" veal gets more than milk and milk substitutes, according to USDA inspectors. The U.S. District Court Judge in Syracuse, New York, recently placed four veal producers in New York state under injunction because evidence was brought forward to show that they had been using the illegal carcinogenic growth hormone diethylstilbestrol (DES) in their calves and had marketed these calves for slaugh- ter containing illegal residues of this synthetic hormone. Under the terms of the injunction, these four producers have been ordered not to use DES or to market DES-treated animals. Furthermore, they will have to pay for FDA and USDA residue testing of more than 1,000 animals currently on hand and will be unable to sell the calves for food if residues are found. This court action followed a nine-month investigation into the illegal purchase and use of DES by veal producers. This court action is the first involving veal producers and DES since the ban in 1979 on the use of this hormone, although widespread illegal use of DES in beef cattle was uncovered in 1980 where several thousand animals had to be impounded. There is an allegedly wel1-recognized blackmarket industry for DES implant pellets in the beef industry. As to how much DES contaminated veal had been sold and consumed prior to USDA's intervention, no one knows.

The Welfare of Adult Pigs: The Effects of Five Housing Treatments on Behavior, Plasma Corticosteroids and Injuries

The effects of five housing treatments (tethers, pairs, and group indoors, a yard and a paddock) on the behavior, physiology (stress physiology and blood metabolites), health (injury status) and production (food eaten and oestrous expression) of 30 non-pregnant, adult female pigs were determined at regular intervals over 12 months. *Pigs housed in pairs exhibited a chronic stress response;* they had highest free corticosteroid levels "at rest", a disrupted diurnal rhythm of plasma corticosteroids and a slower corticosteroid response to and recovery from transport. Behaviorally these pigs spent more time lying alone than pigs in other treatments, and there was a significant regression between lying alone behavior and free corticosteroid levels suggesting this behavior may be a useful indicator of welfare status. The group of six pigs housed indoors showed the consistently lowest total and free corticosteroid levels during the entire experiment, and also the least lying alone behavior; however these responses may have been influenced by their similar rearing and experimental environment. While *the occurrence of inappropriate behaviors* such as champing, biting and excessive drinking was generally low, it *was higher in pigs housed indoors particularly the tether and pair treatments,* sug-

gesting mild frustration in these latter two treatments.

A comparison of the two most contrasting environments (tethers and paddock treatments) showed no clear welfare advantage to housing dry, adult pigs in a more extensive (natural) environment.

Ironically this study, reported in the agribusiness weekly *Feedstuffs* was entitled, *Study shows* sows *fare* same *when housed inside, outside! (Feedstuffs,* May 9, 1983.)

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Reflections of an Ex-Veal Farmer

Jim Pittenger raised veal calves for five years, from 1970 to 1975. He stumbled into the business, as he believes many do, after seeing an advertisement by Agway Inc. for milk-fed veal. He started out with 10 calves and when that went well increased to 100. He eventually enlarged his operation to handle 200 calves at a time. All the calves were ap- proximately the same age and he tried to get two-and-one-half groups through to slaughter each year. By the end of his business 600 calves per year were going to slaughter.

It is during the first month that the health of the calves is the most precarious. At this stage there is a high incidence of illness and a lot of money is spent on medications. It is also during this period that the mortality rate is highest. On a good operation the highest mortality rate would be between 10 and 15 percent. As a personal goal Jim Pittenger tried to keep his mortality rate below 5 percent.

By the sixth week the calves' health usually stabilizes and the raising of the veal becomes mainly a feeding operation. Their health is good considering their situation. If they were being raised outside they would be hardier. As it is they still have little resistance to diseases, they bruise easily which has caused some deaths, and they always seem short of breath as if they had lung congestion. Jim thinks that even with the best ventila- tion systems the air in the barns is humid. Swollen joints is also fairly common, but most of the problems with the older calves come from accidents. The health of the calves in their later stages was much less trouble than in their first few weeks.

At the end of his involvement in raising veal calves, disease was still a major problem. The mortality rate for his last group of calves was 45 percent. He took 30 calves he thought were going to die out of their crates and put them out- side where they were fed on grass and hay. These calves became considerably more healthy than they had been. Those calves who had not previously stood up voluntarily while still in confinement stalls were now standing up on their own. Many of the calves became playful and would chase or otherwise interact with Jim's cat and dog. Of the 30 only one calf died.

It was a personal decision for Jim Pittenger to stop raising veal calves with more than one factor acting upon that decision. Part of the reason he quit had to do with animals' rights. He feels that the present system of raising veal calves is too hard on the animals and that it is not an ideal system in which to raise them. The neighboring farms were family operations, the people were old-time farmers using time-tested methods, the animals were well cared for and as a result they had low mortality rates. Jim saw that his neighbors had a lot of personal pride in their farms and their animals, which he doesn't feel is possible in raising veal calves. He gradually became more and more demoralized, partly due to the high mortality rates experienced in raising calves for veal. Jim feels that although veal is a delicious product, it is somewhat of a human gimmick, especially white veal, and is not in the best interest of the animals. He feels that the system presently being used for producing veal can be improved and indeed *has* to be improved. Other reasons for Jim getting

out of the business included boredom and the desire to make a career change.

At one point he tried switching to a pen raising system with automatic feeders, but it didn't work out, mainly because the feeding system didn't work, and he was forced to go back to the narrow crate system. At the time he was trying this new system he had not heard of the straw yard system employed by Quantock veal in the United Kingdom and felt that if he had, he could have benefited greatly from their knowledge and experience. Before he got started Jim traveled to a few states trying to find the optimal system. He found there was little choice and feels that nobody was doing any better than he had done. After finding out about the straw yard system through this interview he wished he had gone to Europe in search of a model. He was pleased to hear of the great success of this system in the U.K. and, if he was still in the business, he said he would reduce the number of calves he raised and would become active in developing a straw yard system.

One observation that Jim made was that those calves he singled out as his favorites and so had relationships with seemed to be happier than the rest of the calves. It seems that those animals who were allowed outside freedom, a proper diet, personable human contact who were in some way treated with normality, were the healthiest and the happiest. Jim believes that the psyche or spirit of the animals is overlooked. He thinks that people get caught in cycles and are not aware of what they are doing. "I rationalized what I was doing. You need to stand back to say, 'I am doing this. What are my alternatives?'" If Jim was ever to go back to animal farming his first choice would be to raise sheep or cattle; his last choice would be to raise veal calves, and then, only in straw yards or group-pens.

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Research into Bizarre Alternatives

Authors K. Shamsuzzaman and M.F. Haard, affiliated with the Department of Biochemistry, Memorial University of Newfoundland, St. Johns, Newfoundland, write in *The Journal of Food Science* (Vol. 48, p. 179-182, 1983) that a crude preparation of gastric proteases from harp seals was found to coagulate milk over a **wider** pH range than porcine pepsin, which is commonly used in the manufacture of cheese. These authors prepared cheddar cheese with seal gastric proteases and found that this gave significantly higher "sensory scores" than cheese made with calf rennet. The authors conclude their paper by stating that "the total annual catch of pups and adult harp seals in Newfoundland is about 91,000, taking an average of the data for the years 1976-1979. By following a modified extraction method, the estimated total yield of coagulant from the seals' stomachs would be sufficient to clot about 31 million liters of milk. Such serendipitous use of a by-product of the seal industry, while on the surface seems exemplary in terms of its innovativeness and efficiency, can surely only lead to further justification for continued slaughter of seals in Canada, especially if the Canadian cheese industry becomes dependent upon seals for their cheese production."

Animal Models in Biomedical Research - Some Paradoxical Findings

In *Science* (Vol. 208, 1980, p. 1475-1476), Robert M. Neren and co-workers found that rabbits on a two percent cholesterol diet that were individually petted, held, and talked to, and played with on a regular basis, had a 60 percent reduction in the percentage of aortic service area exhibiting atherosclerotic lesions compared to other rabbits which were given the same diet and normal laboratory animal care. This research shows how the routine treatment of laboratory

animals may actually bias certain research conclusions, especially in toxicity studies and in research investigations of such multifactor diseases as atherosclerosis. More recently social stress has been implicated in the development of atherosclerosis in monkeys.

J.R. Kaplan writing in *Science* (Vol. 220, 1983, p. 733-735), reported that socially stressed adult male cynomologus monkeys fed a *low* fat, *low* cholesterol diet developed more extensive coronary, artery atherosclerosis than unstressed monkeys. The stress was induced by periodically altering group memberships by redistributing animals among three groups. The monkeys were redistributed once every 12 weeks in the first year of the study and once every four weeks in the following nine months. Reorganiza- tion of groups was selected as a means of inducing stress because previous reports have indicated that introduction of strangers fosters a high degree of social instability in macaques monkeys. The results of this study suggest that psychosocial factors may influence the development of atherosclerosis. These two scientific reports illustrate a new dimension in biomedical research which has been called behavioral medicine, through which a greater understanding of the emotional and social factors involved in human disease and disease prevention may be more fully understood. Furthermore, such studies provide insights into the importance of social and emotional factors in the development of disease in animals such that researchers and others can no longer ignore the fact that animals are likely to suffer emotionally as well as physically, in ways more similar to us than we might other- wise wish to believe.