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FARMSTOCK

MANAGING EDITOR: Ablodun Ojugbela

INDEX TO ADVERTISERS

- | | |
|--------------------------------|-------|
| 1. Livestock Feeds Limited | p. 5 |
| 2. Dizengoff (Poultry) | p. 6 |
| 3. Dizengoff (Pharmaceuticals) | p. 8 |
| 4. John Holt Motors | p. 9 |
| 5. Rabbits | p. 11 |
| 6. Debordan Enterprises | p. 15 |
| 7. Classified | p. 18 |

POULTRY:

Egg size p.

PESTS:

Fighting birds & locust with radar p.

HORTICULTURE:

Bananas & Citrus are not the only Tropical fruits p.

FISHING:

New method of preserving fish p.

PIGGERY:

The pork Bladder Worm p.

GENERAL:

New Equipment p.

The Veterinarian in a developing nation (I) pp. 10 &

News p.

Laughter p.

New Equipment



NEW CROP SPRAYING TECHNIQUE

The Micron ULVA crop sprayer, a neat low-cost battery operated machine, seen here during a recent demonstration of an improved crop spraying technique developed by a British Company in conjunction with the National Research Development Corporation. Part of a range of equipment designed to apply pesticide solutions using the new method, the ULVA should be invaluable in areas where pests and disease take a heavy toll of crops.

The technique, known as ultra-low spraying, uses very small amounts of an oil-based chemical instead of the conventional water-based solution. The method of application lies in producing uniformly fine drops which cover a much greater crop area and give better distribution more quickly and cheaply than conventional methods. The pesticide solution is applied through a "Rotary Atomiser" nozzle rotating at about 7,000 revolutions per minute - using only a few pints per acre as opposed to about 200 gallons when using water-based solutions, although pressure, yet achieving similar results. The chemical is supplied in ready-to-use pre-packed form, requiring no further dilution or mixing application. The container is simply screwed on to the machine, eliminating the hazard of handling the pesticide. When the spraying operation is completed the container can be removed from the machine and the remaining liquid can be used another time.

TRADE ENQUIRIES: Micron Sprays Ltd., 1-3 Phillips St. Birmingham, 6, England.

LETTERS

ORGANIZE 'MISS AGRIC

Dear Editor,

From the look of things and judging from the performances of Farmstock since its debut over a year ago,

X X X X

ADVISE ME

Dear Sir,

I, a young graduate in Agriculture from Ahmadu Bello University Zaria and now on the Managerial staff of a company will like to start poultry farming on a small scale for egg production. I will therefore be grateful if you can furnish me with the following information:

(1) News and pictures about life in your farm and probably accompanied by some old copies of your Stockbreeders monthly publications which touch the subject.

(2) Kinds of breeds and hybrid chickens proved the best and are available.

(3) Measures taken to safeguard any outbreak of disease and the type of protection given to day-old chicks till age of six weeks.

(4) How to obtain sexed chicks.

Yours Sincerely,
E. Ade. Salako

Bacita Estate
P.M.B. 95, Jebba.
Read Farmstock regularly. Answers to all your enquiries can always be found in the various issues.

X X X X

POULTRY

Sir,

I would be very grateful if you could send me the lists of books or information you have on poultry and Farm management as a whole.

the paper has come to us. Gradually, it is becoming a handy companion to us a farmer and farm aspirants.

Women have a way of boosting a thing. My husband's suggestion is for FAR STOCK to organise countrywide Miss Agric

Such a contest the expensive will undoubtedly put FARMSTOCK on more door-steps.

O. G. ILEGBA

X X X

MALTHUS DISPROVED AGA

Your July edition bore the title 'Farmers of the Future' by the Farm Motor Company of America. It makes very interesting reading.

The bogey of population explosion is deflated. I seriously suggest that you repeat the material sometime again and let your post-announce such an article.

It was the most interesting piece I ever read as a student to a staggering problem.

Kano Hamma D.
Editor's Note: Because of similar requests we shall consider replies to some previous articles whenever necessary please.

X X X

MANAGEMENT

I will appreciate your immediate reply.

Thanks.

Yours Sincerely,

A. O. A. OTUDU

P.O. Box 54
Calabar
Editors' Note: Read Farmstock regularly please.

Advertisement

WORM INFESTATION

IN POULTRY

DO YOU ALWAYS REALIZE THAT WORMS CONSTITUTE A BIG THREAT TO YOUR PROFIT MARGIN FROM POULTRY AND PIGS? HERE ARE SEVERAL WAYS IN WHICH WORMS (ASCARIDS) ADVERSELY AFFECT YOUR ANIMAL AND THEREBY DRAIN AWAY YOUR MONEY:

1. Reduced vitality and increased susceptibility to diseases like pneumonia, gastritis, and anaemia
2. Intestinal upsets such as diarrhoea or even blockage of the intestinal track by worms when present in large numbers.
3. Loss of egg production in poultry.
4. Reduced growth rate, your poultry take a longer time to reach profitable point of lay.
5. Increased mortality from worms and diseases which are aggravated by them.

You all know that when animals are healthy, they are able to withstand diseases more than when they are weak. At certain stages of the worm's life, they feed from the blood of the hosts (birds) while at other stages, they live directly on the food which their hosts have eaten.

Different stages of growth of worms are found in different parts of animals body - in liver, heart, lungs and finally adults and eggs in the intestine. In all these body organs, the worms can cause

severe damage. The havoc which worms have been causing in your poultry and pigs is now very clear.

These symptoms will help you to suspect that your poultry is infested by worms: Growth retardation, pneumonia, gastritis anaemia, reduced egg production, loss of vitality, increased mortality.

CLEAR WORMS WITH
GLOBE PIPERAZINE
WORMER

By using Pfizer Globe Piperazine Wormer, you can avoid the problem enumerated above. Here is how to make the wormer work:

(a) POULTRY: 4-6 WKS

Use two spoons (1 fluid ounce) per two gallons of drinking water for one day.

ABOVE 6 WEEKS:

Use 4 table spoons (2 fluid ounces) per 3 to 4 gallon of drinking water.

Repeat the following day.

(b) PIGS AND HORSES:

Use 2 table spoons per 100 lbs. body weight as a drench or mixed into palatable feed. Dose pigs just before weaning or 4 weeks prior to farrowing.

N. B. Do not give any feed or water until the medicated ones have been consumed.

Repeat the above dosage one month later in order to clear out the worms completely.

Also, remove litter after deworming so as to avoid any reinfestation. And because deworming imposes a stress on your animals, give TERRAMYCIN (Oxytetracycline hydrochloride) Soluble Powder for at least 2 days before deworming, and continue for a minimum of 3 days after this operation in order to overcome the stress.



EGG SIZE

LIKE ALL OTHER ASPECTS OF EGG PRODUCTION EGG SIZE IS AFFECTED BY BOTH THE BREED OF THE BIRD AND WHAT HAPPENS TO IT DURING ITS LIFE. FEEDING, MANAGEMENT, AND SO ON. THE AGE OF THE BIRD IS ALSO VERY IMPORTANT, AS THE GRAPH SHOWS. ONE SET OF FIGURES ON THE GRAPH IS FOR THE THORNBUR 404, THE OTHER FOR THE THORNBUR 808.

The 808, which is a smaller bird and eats less food also lays smaller eggs, and this illustrates a general truth that smaller birds are cheaper to keep but lay smaller and less valuable eggs. Bigger birds need more food, but may lay bigger eggs (Of course it is not quite as simple as that. Some big birds may lay quite small eggs, and some very small birds like the 808 lay eggs which are surprisingly big considering the size of the bird.) One of the breeder's problems, then, is to produce birds which have the right balance of egg size to cost of keeping the bird.

It would be possible to produce birds which lay big eggs right from the start of lay, but such birds would be so big themselves, and so costly to feed that they could never make a profit. Similarly it is possible to breed a bird too small to produce saleable eggs. So breeders have to aim for a bird in between these two extremes and in fact most

produce two birds, one of the 404 type with good sized brown eggs, and one of the 808 type, with smaller white eggs and a lower production cost per dozen. Egg producers then have to choose the bird to suit their own individual requirements.

CUSTOMER'S NEED

Whichever bird they choose it will start off laying mostly small eggs, and end by laying mostly big ones. To meet customers needs for all sizes of eggs it is

by

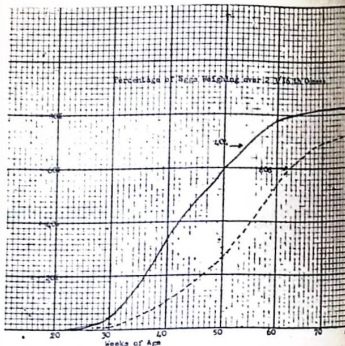
L. J. ELSLIE

M. A. Cantab

Therefore necessary to have flocks of different ages in lay so as to produce the right proportion of eggs in each size all the time. If most customers insist on big eggs the 404 type of bird will suit the farmer by laying a high proportion of large eggs. On the other

Continue on page 13

MONTHLY ADVISORY SERIES



THE ROSS ROCKET

A new breed of chicks. To get maximum production from it and the fulfilment of the conditions discussed in this article.

POULTRY

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NEWS

WEST POULTRY BOSS VISITS FARMSTOCK.

Chief E. A. Adeyemo President of the entire Poultry Farmers Association of Western State, was in Lagos recently to see off her daughter who flew to the U. S. for further studies. Chief Adeyemo took some time off from his crowded Lagos visit to call at the Office of the FARMSTOCK. He was warmly received by the Managing Editor, Abiodun Ojubele.

FARMING BRIEFS

NUTRITION COURSE IN B'KEBBI

A two-day orientation course on Nutrition and Health Education for Government and Gwandu N. A. Public Health Staff opened here recently.

The Gwandu N. A. Councillor for Natural Resources and Information Alhaji Usman Maitambari Madawakin Gwandu, who spoke on behalf of the Councillor for Public Enlightenment, Health and Social Welfare, urged the participants to work hard and pay attention to what they would be taught.

The course was conducted by Malam Abdu Ladan and Malam Yahaya Pai, two Health Superintendents from the Headquarters of the North-Western State Ministry of Health and Social Welfare.

ZURU FIGHTS ANIMAL DISEASES

A total number of 15,898 animals had been inoculated against various diseases in Zuru Emirate, during the period between the months of January and July this year, according to a release from the Zuru N. A. Information office.

'BUILD YOUR FARM MACHINERY' - UN EXPERT

DEVELOPING COUNTRIES SHOULD MANUFACTURE MORE OF THEIR OWN FARM MACHINERY AND IMPLEMENTS TO INCREASE AGRICULTURAL OUTPUT, A UNITED NATIONS EXPERT GROUP HAS RECOMMENDED.

THE GROUP, CONVENED BY THE U. N. INDUSTRIAL DEVELOPMENT ORGANIZATION (UNIDO), MET RECENTLY IN VIENNA AS PART OF UNIDO'S EFFORTS TO HELP DEVELOPING COUNTRIES IDENTIFY INDUSTRIES THAT COULD BE BUILT UP.

The experts said developing countries should step up activity in the "total manufacturing sector" of farm machinery adaptation, design development, manufacture, and repair and maintenance.

They said it was "urgent" that UNIDO prepare guidelines for national plans for the development and use of farm machinery.

The 46 experts represented international organizations, government agencies and private industry and research institutions in 31 developed and developing countries.

NIGERIA JOINS RICE CONFAB

The West African Rice Development Conference which sat recently in Monrovia, has paved the way for the creation of a new regional association of African rice growing nations.

Delegates from 14 countries, including Nigeria, prepared the draft constitution of what would be known as the West Africa Rice Development Association.

When approved by the potential member states, the association would become the world's first regional body specifically charged with seeking solutions to problems concerning the production and marketing of rice.

EXPORT BOSS AT NAIROBI CONFAB

Sir Arthur Smith, Chairman of the British National Export Council's African Committee, is to visit the annual Nairobi show September 30 - October 4 where, with two members of his committee, he will welcome buyers from all over Africa to the British Pavilion. Many of these buyers will be brought into Kenya specially for the occasion. They will come from Burundi, the Congo, Ethiopia, Malawi, Ruanda, Somalia, the Sudan, Tanzania, Uganda and Zambian.

The 20 British companies taking part in this year's show will make up the largest-ever British exhibition of agricultural machinery and livestock to be shown in Kenya. Over 50,000 visitors are expected to see the British Pavilion, which is being sponsored by the British Agricultural Export Council.

Shortly after the show, BNEC Africa is arranging for ten Nigerians to visit

Britain for a fortnight. All are members of the Nigerian Association of Chambers of Commerce and Mines and they will be led by its president, Chief S. L. Edu.



Sir Arthur Smith

The United Nations Food and Agricultural Organization has offered its West African Regional Headquarters in Accra as the site for the association and the U. N. Development programme has agreed to provide the necessary financial assistance, with a contribution from the United States.

Central to the objective of the association will be the creation of a research unit in West Africa which will seek ways and means to increase rice production in the region, while improving existing distribution methods.

Named to the Advisory Committee were six West African nations - Ivory Coast, Liberia, Mali, Nigeria, Senegal, and Sierra Leone. Four non-African nations - the United States, the United Kingdom, France and the Netherlands - also are members, together with three specialized agencies of the United Nations and two American private organizations - the Ford and Rockefeller Foundations.

PESTS & THEIR CONTROL

FIGHTING BIRDS & LOCUSTS WITH RADAR

DR. GLEN SCHAEFER, PROFESSORIAL RESEARCH FELLOW AT LOUGHBROUGH UNIVERSITY OF TECHNOLOGY IN THE NORTH OF ENGLAND, HAS DEVELOPED A RADAR TECHNIQUE THAT COULD BE A POWERFUL WEAPON IN THE BATTLE AGAINST LOCUSTS AND THE STRUGGLE TO PREVENT, OR EVEN ELIMINATE, DAMAGE TO AIRCRAFT BY BIRDS.

He was always interested in nature and birdwatching, as a boy, he lived in the wild countryside near Toronto, Canada.

After graduation, he did research in mathematics, particularly mathematical physics, and eventually went to Britain to work for English Electric (now merged into the General Electric and English Electric Companies Ltd) on the development of a nuclear power plant.

But he did not lose his interest in birdwatching. Rather it developed into a particular interest in bird migration. Eventually he left his job as a physicist to concentrate on birdwatching.

Identification Difficulties

Since many birds migrate at night they can be identi-

by **TONY OSMAN**,
London Science Writer in an interview with Dr. Glen Schaefer

fied only on the rare occasions when moonlight, for example, makes them visible. However, it had been known for some time that flocks of birds, at least, would give radar-reflections indeed there is now a well-developed field

of study called radar ornithology. Dr. Schaefer decided to see how he could use radar in his studies.

He bought an ex army radar for £100, and installed it in a field near his home to the south of Leicester; the



Dr. Glen Schaefer (left), Professorial Research Fellow at Loughbrough University of Technology in the north of England, and Mr. Jeremy Roffey, an entomologist with the Anti-Locust Research Centre in London, are seen here with some desert locusts which were released over an English airfield as part of a test in tracking locusts with radar. Both men were members of an expedition to the Sahara where a pilot experiment was conducted in the tracking of solitary locusts

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Royal Aircraft Establishment lent him a generator to power it. Originally designed for anti-aircraft use, the radar could follow a "target", such as a flight of birds, automatically.

He found that he could manipulate the circuits of his radar set so as to identify species of birds.

Zig-Zag Pattern

The echoes recorded on his radar showed a regular zig-zag pattern of intensity. Dr. Schaefer realised that this was the actual wing-

beat pattern of the bird. If its characteristic flight was one in which a wing alternated with active flight the radar trace would show horizontal marks interspersed with the zig-zag patterns. Dr. Schaefer noticed that each species had its characteristic wingbeat pattern.

Though this was unexpected, it was easy to understand. The rate at which a bird flaps its wings is governed by such factors as its mass, the moment of inertia of its body and the size of its wings.

The rate is decided by, for example, its musculature and its skeletal construction and a migrant's flight is so economical in energy that its flight muscles must be "tuned" to act with the highest possible efficiency.

These factors combine to give a wingbeat pattern that is constant to within ten per cent, for any particular species. Dr. Schaefer verified this by photographing 45 different species of migrant in flight.

It is difficult to understand how the characteristic wingbeat pattern of a species can be detected by radar which, in animals, is mainly reflected by fluids: the wings of birds contain very little fluid.

It is possible, but very unlikely, that Schaefer's patterns represent radar reflections from the actual wings. They might alternatively represent a slight alteration

Continue on next page

Continued from page 8

RADAR

In attitude occurring with each beat of the wings—the reason from the beats is bound to affect slightly the way that the bird is pointing and radar could pick this up.

Variation Too Small

However, observations show that this variation is too small—it could account for only a one per cent, change in the intensity of the echo. The most likely explanation involves the large pectoral muscles that move the wings.

As these move, the body becomes noticeably different in shape—rounder as the muscles swell. This change would alter the intensity of the radar echo and almost certainly this is the mechanism that gives rise to the observed wingbeat pattern.

Whatever the reason for the identification, it is invaluable both for scientists studying migration and for those concerned with protecting aircraft from bird damage. Though collisions between aircraft and birds only rarely cause serious damage, there are roughly two such "strikes" every week at London's Heathrow Airport.

It is estimated to cost £150,000 per year to repair the damage. Military aircraft, which fly lower and faster, sustain about a £1 million worth of damage in Britain each year.

Dr. Schaefer is sure that his technique can easily be used to monitor an airfield for birds likely to endanger aircraft and, incidentally, can be used to provide information needed by those trying to decide where to establish London's third airport.

Tracking Locust Swarms

His application of the technique in the battle against locusts is more recent. Last year (1968), he mounted a marine radar set on a Landrover and took it to North Africa. He was

Is the end of rat nigh ?

The rat is undoubtedly man's most elusive pest. For decades incessant wars to exterminate this wily creature have failed. Usually the rat population seems to yield or succumb to a new attack to wipe it off. But as more and more doses are applied, this seemingly defenceless creature develops an immunity to the bewilderment of its attackers.

Once the immunity is known, the attack lessens and young rats, stronger and more ravenous than their forebears soon flood a new locality. But the war goes on.

A new approach to the rate problem is undergoing



more tests to confirm the claims of its inventor. The trick is to inject some male rats with a serum which renders them semi impotent. These half impotent

(or sterile) rats are able to mate with female rats and cause false conception.

The female behaves as if

Continued from page 17

pelasantly surprised when he picked out solitary locusts up to two miles (three kilometres) away, and swarms at distances of up to 30 miles (48 kilometres).

He could distinguish between male and female locusts and between the relatively harmless solitary locust and the gregarious ones—the wingbeat patterns presumably vary because the different kinds have different sizes and masses.

Dr Schaefer's results with locusts, like those with birds, are valuable both to the academic community and those who must deal immediately with the pests.

The solitary locust is known to fly at night; and it is known that, in some way, large groups form, adapt to group life, and turn into the recognisably different gregarious type that menaces crops in Africa.

Continue on page 17

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THE VETERINARY DEVELOPING NATION

To the illiterate and uneducated intellectual, a veterinarian is nothing more than "dog doctor" or "cow doctor."

The health of a nation is the wealth of that nation. In this age when every nation tries to stand on its own, any factor that has adverse effect on the health of a nation will greatly hamper all its activities nationally and internationally. Health itself is quite a wide field which not only depends on the human population but also on the animal population.

Gone are the days when man was thought of as being quite apart from the rest of the animal kingdom especially now when we remember the great plague that hit Europe in the last century and when in particular we remember the influenza epidemic that swept through Nigeria just over a decade ago - when dear ones lost their lives and the nations manpower suffered a colossal reversal.

A man is not healthy by the amount of drugs given him in hospitals. All the drugs do is to act as second class defence against the millions of infective micro-organisms that share the world with man.

Nature has so built the human body that it can resist infection, however the human body is like a machine which needs constant service to combat the effects of wear and tear. Man must supply his systems with source of energy to combat the natural process of senescence.

It is not just that man must eat food, but he must eat good food; in short he needs a balanced diet. It has been said that people die not due to lack of nutrition but from malnutrition. It is not just the amount of grain and chaff one

pumps into the stomach that matters, but the quality of the food. Even now the amount that we seem to be happy about seems to be diminishing at such a fast rate because in the population - food production race, population is having the gold medal.

FOOD PROBLEM

Statistics show that the world population is increasing at the

rate of 132/min or 190,000 a day which is equal to 69 million a year that is a new Nigeria (55 millions) every 9 months 15 days. Yet the corn, yam, rice are still taking the same time to grow to maturity, and the land become scarce. This is then the grim state of world food problem.

Attempts are being made to get food from any available source even from petroleum.

Nigeria can certainly not afford to convert its petroleum to food now, but there is something we can safely explore and exploit to our advantage - **OUR LIVESTOCK.** Nigeria with an area of 37,000 sq. miles had up to 7 million heads of cattle, twice the number of goat and about 4 million sheep and some 220,000 pigs. 10 years ago (1959 F. A. O.)

Nigeria is really rich in livestock, however 9/10th are in the savannah and guinea-savannah zones of the Northern parts of the country where most of the herdsmen are nomadic and have to trek hundreds of miles in search of food and market with the result that the best of our livestock that should go to improve the health of our people goes to provide energy for the great trek these animals have to take.

Thereby, the animals breeding sites for diseases as rinderpest, foot and mouth diseases, anthrax etc. always on the wane sick and emaciated before they get to the market.

Any wonder Nigeria pay £3,500,000 for milk products in 1964.

It is significant that politicians of these days

by **'WALE TOMORI**
Faculty of Veterinary Medicine Ahmadu
University, Zaria.

the importance of animal to the health of a nation. A minister of Agriculture of Nigeria's forward to the animal of Veterinary division ministry said in the past year (1960) a great increase in both and centres for production.

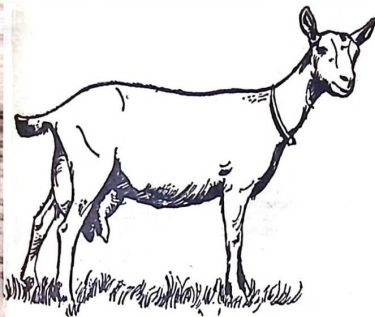
Poultry expansion and each month over 100,000 chicks were distributed. Ministry Hatcheries a portation from overseas. **THIS HAS NOT SATISFIED DEMAND.** It seems we have suddenly realised the immense potentiality of our livestock as a source needed animal products equally needed profit.

DISEASES

The importance of animal cannot be over emphasised particularly when today that many more are succumbing to diseases which are still mysterious, hospitals and clinics are overwhelmed.

In our villages and towns where there is free movement between sheep in and out of one cannot but help but note the high rate of mortality, nose, diseases which aremissible between

AN IN A



A good source of milk that has not been considered at all

...d; such diseases include tuberculosis, rabies, anthrax, taeniasis to mention a few. These diseases not only play a mighty role in reducing our population, but also lowers productivity and aggravates the shortage of animal proteins which are most essential for maintenance of our health, thus saving the human population, weak and very easily susceptible to other diseases which do not come from the animals. So a vicious cycle of hunger, sickness, disease is set up which besets the nation no good.

Nowadays many more people in big cities live to old age and the world is left with many more mouths to feed from a source which is fast dwindling.

Herein comes the Veterinarian, the vet, by his training which demands such a diversity of qualifications must of his only maintain the livestock of his country but also increase productivity.

PROBLEMS

The veterinarian in Nigeria runs into many problems which many other developed countries have tackled and overcome, but he is also exposed to many problems pertaining to Nigeria and Nigerians. First just as the human beings need food, so also the livestock need food

and here is Nigerian's problem. The feed for the livestock is hard to come by, hence our herdsmen have to travel miles to get feed for his livestock. Nigeria is "blessed" with a host of insects which act as vectors for most of the devastating diseases common to livestock.

One of them is the tsetse fly the vector for the organism causing trypanosomiasis. This disease leaves our livestock weak, lean and emaciated making it worst prepared for other diseases. Another problem is that most of the herdsmen are nomadic, moving from place to place, changing environment to which many may be early adaptable, but to which the animal is least adaptable. This is a social problem. Tracing it to its root, one finds that the herdsman only moves to areas where he can get food the whole year round, then he himself finds it unnecessary to move about.

CO-OPERATION

Hence, it is necessary that our agriculturists and scientists must work hand in hand to grow and produce high quality feed stuff all over the whole land. This is a great task which must be done if we ever hope to improve the

lot of our people. Aims are not achieved unless efforts are made to achieve them.

With the livestock settled, the Veterinarian can now concentrate on keeping the animals healthy and free from infection. He can now dream of producing high efficiency cows with high birth-rates, and he can now attempt to improve breeds by the latest scientific methods such as artificial insemination.

Producing highly efficient livestock is not the end of the process of bringing excellent protein to the populace. Meat inspection is a most important aspect of man and animal health which the Nigerian government has placed in the hands of the people least competent to do so.

It is ridiculous to expect officials of the ministries of health to know which meat is fit for human consumption. It is not a surprise that our abattoirs are more like refuse-dumps, the meeting place for the world assembly of flies. It is most disheartening that the only University in West Africa that offers a full-time course in Veterinary Medicine receives its meat supply from the most appalling

abattoir where the arrival of vultures and flies signify the time for killing cows.

Even if the Veterinarian has done his possible best to bring the most suitable cows to the abattoirs, these agents of disease reduce his work to zero.

MEAT INSPECTION

Excellent and efficient meat inspection by highly skilled professional has an important role in disease prevention, disease control. With improved stock and greater increase in number of livestock Nigerian meat must be thoroughly inspected to gain acceptance for it in neighbouring African countries. It is only then that the consumer is assured of wholesomeness, freedom from diseases and cleanness of meat and meat products.

MILK

This brings attention to the role milk and milk products can play in the health and economy of a nation especially Nigeria. Milk contains almost all the types of foodstuffs, carbohydrates (fat, protein etc. and this makes them good breeding ground for organisms which

Continue on page 13

RABBITS

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BANANAS & CITRUS ARE NO THE ONLY TROPICAL FRUIT

Says Bridget Smith

Bananas, citrus avocado, mango and pineapple almost every developing country in the tropics or sub-tropics produces at least one of these fruits or range of many others.

They are crops of great potential value but, in many countries, the wrong varieties are grown, storage is inadequate, and the possibilities of exporting fruit have never fully exploited.

The Tropical Products Institute in London, which has done much to help developing countries obtain most benefit from their agricultural products, is aiming to help the fruit producers by organising an international conference this year (1969) which will bring together all sides of the industry.

Dr. G. B. Pickering, head of the Institute's Scientific said, "Our first large-scale international conference was on the oil palm and two years ago we held a conference on essential oils production in developing coun-

tries. Both of these brought together growers in the producing countries, industrial processors, and the scientific technical and economic experts including the Institute's own specialists.

All who participated were very enthusiastic and there useful and constructive discussions which we think were of particular benefit to the delegates from the developing world. We hope that the fruits conferences will be equally successful."

Wide Discussions

The meeting will be held in London next September, 15 to 19 and, as well as dealing with specific fruit,

papers will discuss topics such as problems of processing, processing industries in developing countries, shipping, containerisation and modern developments in packaging, controlled atmosphere storage of fruits, processing less familiar fruits;

the role of air freighting in the international trade, chilling injury in tropical fruits; pathological problems of fruit transport and storage modern developments in biocides for use on fruits;

physiology of tropical fruits; design of fruits stores, organisation of international fruit trade.

Dr. D. G. Coursey, organising secretary of the conference, is head of the Tropical Products Institute's Fruit and Vegetable section.

He has already visited the Caribbean twice in connection with work on root crops and has been invited by the University of the West

Indies to spend two months in Trinidad early this year to continue this work.

He is hoping for very full participation in the conference by developing countries, both those which have considerable experience of fruit production and those which are still producing little more than for local markets.

"Many West Indian islands,"

he said recently "know much as anyone about banana production and some other fruits but there are other tropical fruits which are grown only on a small scale. A conference should give agriculturalists from the Caribbean the opportunity to learn from others with considerable experience of the production, processing and export of local common fruits."

Fishing

New method for preserving fish under trial

Gradually Nigeria is becoming a fish market. With this economic progress are some attendant undertones of possible loss of profit which is the driving incentive in a trade.

As more fish come into the market, not all is likely to be quickly absorbed. One is at once faced with the problem of preservation particularly in areas where facilities of cold rooms are not enough, uneconomical or absent.

Even along the coast or in big towns where such facilities abound the continuous supply of new catches poses the question of either preserving the unfinished supply or disposing of the lot by other means. A new method, simple and inexpensive, has been announced in Sweden.

SIMPLE APPARATUS

The process which does not call for any elaborate apparatus is termed ENSILING. A release by the

Micro-biological Institute, Ultuna Agricultural University, announcing the new technique called the process - prevention of Clostridium Botulinum Type E poisoning and Fat Rancidity Silage Fermentation. A trial to aid mass education also been prepared.

What is the process? consists of packing fish in ground and mixed with starch (20%) plus oil compounds. The paste then kept in a silo. It is revealed that bacteria fast storer sets off a rapid flow of lactic acid fermentation. This product is the preservative. Fish on which has been smeared has remained fresh and edible for about three months.

BOON

This process is a boon for fish dealers. The entire process of disposing of a sold fresh fish is by converting the surplus into fish meal.

Continue on page 17

A wise person
learns everyday

READ
FARMSTOCK
ALWAYS

Continued from page 6

EGG SIZE

hand some farmers find it easier to sell a less proportion of big eggs, but more smaller ones at a less price.

They will prefer to use a smaller type of bird such as the 808 or one of its competitors.

Quite a number of factors can affect egg size of particular lots of birds apart from their breeding. One of the most important is temperature. The higher the air temperature in the poultry house the smaller the eggs.

For this reason eggs from any strain of bird are smaller in West Africa than in Europe

Nothing can be done about the climate, but it is important to be sure that the poultry house is no hotter than it need be, by providing plenty of ventilation.

Numerous diseases have a bad effect on egg size. The worst of these are probably worms and coccidiosis, which damage the bird's digestive system, and prevent it using its feed properly. The damage from a bad outbreak of either disease can reduce egg size right through the rest of its life.

Other severe diseases, such as aspergillus can be equally damaging, and every precaution should be taken against them.

IMPORTANCE OF FEED

Feed makes quite a difference to egg size too. Obviously badly balanced feed will reduce egg size as well as

all its other bad results, but there is no need to say more about that here since Farmstock readers undoubtedly know the importance of providing a well balanced ration for their birds already.

Some difference to egg size can be made by using good commercial rations on general sale. The principle is that anything which increases the intake of nutrients improves egg size. Special high nutrient density rations for small birds like the 803 or Hyline improve their egg size quite usefully.

Such rations are not normally recommended for larger birds, but can be used to increase egg size in some few cases of difficulty, perhaps only for a limited time.

A more generally useful way of improving egg size is by feeding pellets instead of meal.

It is true that pellets cost a few shillings a ton more to buy, but commonly the difference is balanced by reduced wastage, so that the better egg size is more or less a bonus. It is always necessary to be careful in changing from meal to pellets.

They should be introduced slowly so that the birds get used to them, and one needs to watch that the pellets are not too big for the birds to eat. Once it is certain that all the birds are eating pellets freely the whole of the feed can be given in that form. The same precautions should be taken when changing back from pellets to meal, though the change is normally less troublesome in that direction.

ONLY PROBLEM

There is one problem with all-pellet feeding, and that is the increased risk of feather picking, particularly with

White Leghorn type birds, but this can be overcome in the usual ways. For medium hybrids pellet feeding in the early part of lay is a very useful way of increasing egg size more rapidly than would otherwise be the case.

In the later stages of lay when production is getting less, and the eggs are mostly a good size anyway, the birds can be changed back to meal. At this time of life the birds will often overeat and grow fat so that the change back to meal will help to prevent them doing so, and reduce costs.

This two stage feeding plan is becoming fairly popular in Britain now, and gives farmers the benefit of a better egg size early in lay, while keeping costs down in the second part of the laying year.

Continued from page 11

THE VETERINARIAN

cause such diseases as tuberculosis brucellosis etc.

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This milk can either be infected due to poor handling or these organisms may be present in the animals producing the milk - so the importance of a healthy animal cannot be over emphasized here. As Nigerian come to realise the important role good milk can play in their health problems, more high milk producing cows will have to be raised and the numbers we have will have to be maintained and increased.

Unfortunately the local breeds like the Zebu, the Shuwa Arab, the Sokoto Gudali etc. are not prolific milk producers; research experiments in hybridization and upgrading of the local breeds have to be pursued vigorously and we need highly efficient and qualified Veterinarians in this field.

The idea that Nigerians are not milk drinkers is one which has not stood the test of time. Says Mr. LaBeach, Managing Director of Foremost Dairies Ltd Makers of Samco Milk Products.

"In 1962 when I first came to Nigeria, 85% of our business was going to the expatriates, now (1967) seventy per cent go to Nigerians", the words of a man who is in a business with a public interest.

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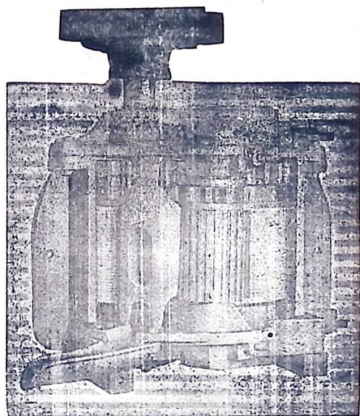
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the pork

BLADDER WORM

— by A. Correspondent

The tapeworm, *Taenia solium*, infests pigs in the immature or bladder-worm stage. The full-grown, or adult, tapeworm, known as the pork tapeworm, infests human beings. The bladder-worm stage is spherical to lemon-shaped and from one-fifth to two-fifths of an inch in maximum diameter.

The pork bladder worm lodges in the muscles of pigs especially the muscles of the abdomen, the muscular portion of the diaphragm, the loin muscles, the heart, the muscles used in chewing, the tongue, the muscles between the ribs, certain muscles of the hind legs, and shoulder muscles. It has been found also in the brain, eyes, liver, lungs, pancreas, and spleen.

Life history—When a human being swallows a live pork bladder worm with raw or incompletely cooked pork the combined action of the digestive fluid and the warmth of the stomach causes the head and the neck of the worm to be pushed out, leaving the

shrunken bladder behind the neck; the wall of the bladder is digested.

On reaching the small intestine, the parasite attaches itself to the intestinal wall by means of its suckers and hooks and develops, in the course of about two months, into a gravid (eggs-producing) tapeworm.

The tapeworm may attain a length of 3 to 6 feet, the longest joints in the tail end being about half an inch long and one-third of an inch wide. The joints or segments at the tail end become detached from the tapeworm chain and are expelled with the excreta, new segments taking their place by growth in the region of the neck.

The detached segments are expelled with the excreta contain numerous eggs which are liberated as the segments disintegrate. Pigs become infested as a result of swallowing the tapeworm eggs or entire segments, each containing hundreds of eggs.

On getting into the pig's digestive canal, the

eggs hatch and the young worms, which escape from the eggshells, bore into the wall of the digestive canal and are carried by the blood stream, aided possibly by their own migrations, to various parts of the animal's body.

DAMAGE—No definite symptoms are associated with bladderworm infestation of swine. Infestation is diagnosed, as a rule, after death upon the discovery of the worms in the muscles and other places. Pork infested with bladder worms is commonly known as mealy pork.

Because of the danger to human health from eating raw or imperfectly cooked mealy pork, special precautions are taken to detect these parasites in swine carcasses under Federal State, and local meat inspection. Lightly infested carcasses are passed for human food only after sterilization, following the removal of visible cysts; if the infestation is excessive the carcass is condemned and not used for food.

TREATMENT—There

is no known practical treatment for the removal of bladder worms from swine.

PREVENTION—Infestation can be prevented by a sound system of rural sanitation. It becomes infested only as a result of swallowing tapeworm segments or eggs with feed water that have become contaminated with human excreta or rooting in contaminated soil. Proper disposal of human excreta will prevent contamination of areas to which swine have access. As the tapeworm cysts become rarer in swine the tapeworm also becomes rarer in man; thus, the vicious cycle of the parasite is gradually destroyed.

It is found in swine only where the level of human sanitation is far below standards. The tapeworm is also capable of developing to the bladder worm stage in human beings, the tapeworm lodging in the eye and brain as well as in the muscles.

Continue on page

Continued from page 9

RAT

she is pregnant and is avoided by other males, soon the 'pregnancy' aborts. The 'impotent' rat is usually more active than the potent, so it causes another false pregnancy.

In effect, if more and more of the 'impotent' male rats are let loose in a locality, their females will stop reproduction and soon the whole lot will die away. This system may prove to be man's all time blow against the ubiquitous rat.

— A Correspondent

It is highly important, therefore, to prevent this dangerous human infestation by a rigid adherence to sanitary disposal of human excreta on farms and in rural communities. Proper sanitation will remove the danger of infecting human beings as well as pigs.

Continued from page 9

RADAR

The fact that solitary locusts can be tracked and followed as they change their style of life may solve many mysteries connected with the transformation.

Continued from page 12

FISH

This avenue is an absolute virgin business line in this country in which poultry and animal husbandry are gradually becoming business pursuits.

Fish is the only source of flesh that satisfies all religious doctrines; as such its marketing is extensive, so too is the catching. The only handicap is putrefaction if it is to be sold fresh. Since many people far away from the coast relish fresh fish, this Swedish invention will go a long way in solving a long-felt need.

— A Special Correspondent

Dr. Schaefer is convinced that his research can help in identifying and destroying locust swarms before they can cause damage. He has shown that a relatively cheap (£1,000) radar can detect these swarms, and pinpoint their density. Furthermore, it can direct aircraft carrying insecticides to the swarms.

Continued from page 16

BLADDER WORMS

When bladder worms lodge in the human brain they may produce epilepsy.

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LAUGH !!!

"Laugh and the whole world laughs with you, frown and you wrinkle your face alone."

Carpenter wants an ugly girl who no longer pursues criminal activities but hard to deal with.

One man woke up one early morning and started shouting:

"We live in a society systematically planned to make everyone work too hard, because he is for ever discovering that he needs too much, on account of the commitments which leave him too little."

A disease is threatening to attack public administration. Monkey de work, bahoon de chop. I' good so?

A man dashed into a chemist shop and asked the proprietor how to stop hiccups. The answer was a hard slap in the man's face.

The man was furious and demanded the reason. "Well", said the chemist, with a smile, "you're not hiccupping now, are you?"

The trouble is that people practise economy when they're broke, instead of when they have cash in hand.

One man recently claimed that he was the master of the house.

This claim landed he husband and wife in court.

A group of surplus girls stormed the office of a local marriage registry and wanted to know why they have no husbands.

BURGLARY. one man confessed is made to look so emiable, honour ble and easy that I was tempted to crack a safe on my way home.

In classroom discussion a boy stood up to say: grandma wa a girl, she didn't do the things girls do today. But then she didn't do the things grandmas do today, either.

A teacher, on receiving the envelope and after extracting money held the envelope to the class to see.

"What is this?" she asked way of a general knowledge.

"A pay envelope, must be boy."

"And what did it contain?"

"Your salary".

"That's correct" replied teacher. "And now has anyone any questions to ask?"

Please, teacher, "said a girl who had been studying the class in silence, "what do you do?"

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