The S·A·P·A· POULTRY BULLETIN

Die S·A·P·V· PLUIMVEE BULLETIN

... to Members—Gratis aan Lede FEBRUARY 1960 FEBRUARIE

REGISTERED AT THE G.P.O. AS A NEWSPAPER
REGISTREER AAN DIE G.P.K. AS 'N KOERANT

The S.A.P.A. POULTRY BULLETIN — Die S.A.P.V. PLUIMVEE BULLETIN

Official Organ of the S.A. Poultry Association — Amptelike Orgaan van die S.A. Pluimveevereniging

Vol. 23 FEBRUARIE 1960 FEBRUARY No. 268

SOUTH AFRICAN POULTRY ASSOCIATION
P.O. Box 1795
Phone Nos. 23-5949/23-5940
Telegrams: "Sapoultry"

SUID-AFRIKAANSE PLUIMVEEVERENIGING
Posbus 1795
Telefone 23-5949/23-5940
Telegramme: "Sapoultry"

JOHANNESBURG
LYDNEY HOUSE/GEBOU, COR./HV. KERK & GOUD STS.

President: **George Ibbett (Johannesburg)**

SENTRALE RAAD — CENTRAL BOARD

Voorsitter/Chairman: **P. J. Serfontein**

Manager/Bestuurder: **Marcus S. Letty**

Secretary/Sekretaris — Associate Editor/Mede Redakteur: **P. A. M. Goss.**

RAADSLEDE — BOARD MEMBERS

Area	*Kommersiële Belange* *Commercial Interests*	*Tentoonstellingsbelange* *Show-Holding Interests*
Kaap—Oostelike en Middellande Cape—Eastern and Midlands	**T. B. Wright** Ellesmere Highlands	**Avro Randall** Grahamstown
Kaap—Westelik Cape—Western	**J. H. Warrener** Kuilsrivier	**N. Bloch** Malmesbury
Natal	**G. R. Dennees** Dundee	**A. S. Robinson** Durban
O.V.S. en Griekwaland-Wes O.F.S. and Griqualand West	**David Jacobs** Kroonstad	**W. D. Steyn** Soutpan
Transvaal	**R. C. Hawson** Mulderdrift	**W. J. Ham** Boksburg

Verteenwoordiger van S.A.P.V. Register van Goedgekeurde Telers/ Representative of S.A.P.A. Register of Approved Producers: **Dan Jacobs** (New Redruth)

Verteenwoordiger van S.A.P.V. se Vereniging van Produsente van Eiers en Slagpluimvee/Representative of the S.A.P.A. Table Egg and Poultry Producers' Organisation: **N. W. Sheppard**

Cover Foto/Voorbladfoto

"The Farmer's Watchdogs."

Contents . . . . Inhoud

S.A.P.V. se Register van Goedgekeurde Produsente
S.A.P.A. Register of Approved Producers

Chairman/Voorsitter:
Jacobs, Dan (New Redruth)

Komitee/Committee:
Haagner, C. H. (Potchefstroom)
James, R. S. (Klipheuwel)
Lello, Colin (Botha's Hill)
Serfontein, P. J. (Potchefstroom)
Wright, T. B. (Highlands)
Sheppard, N. W. (Pretoria)
S. Ebden (Pretoria)
Mrs. C. J. Otto (Bloemfontein)
Mrs. A. M. Röscher (Boksburg)

Verteenwoordiger van die Sentrale Raad/Representative Central Board:
T. D. Davidson (Johannesburg)

S.A.P.V. Beoordelaarsvereniging
S.A.P.A. Judges' Association

Komitee/Committee:
Marshall, W. R., *Chairman/Voorsitter*
Bloch, N. — Coubrough, A. H.
Ham, W. J. — Serfontein, P. J.
Steyn, W. D.

S.A.P.A. Table Egg and Poultry Producers' Organisation
S.A.P.V. se Vereniging van Produsente van Eiers en Slagpluimvee

Sheppard, N. W. (Chairman/Voorsitter), Broekhorst, H. J. Hawson, R. C., Dennees, G. R., Warrener, J. H., Van Balderen, S. C., Kuyper, J.

SMALL ADVERTISEMENTS
KLEIN ADVERTENSIES

FOWLS—HOENDERS

DUNDARACH POULTRY FARM.—Specialist Breeders of Black Australorps, Rhode Island Reds, White Leghorns and the First Crosses. Day-old Chicks, Pullets and Cockerels, also Hatching Eggs, are offered from our Government certified B.W.D. and P.P.L.O. free flocks. Price list and catalogue sent free on request. P.O. Klipheuwel, C.P.

DRESSED POULTRY

We sell Dressed Poultry every Saturday Morning, and our best days for live poultry are Monday to Friday. Please consign:
C. M. ELOFF & CO. (Pty.) Ltd.,
Morning Market
Box 7181, Johannesburg.

Membership of any of the Organisations listed here entitles you to
FULL MEMBERSHIP ADVANTAGES
of the
S.A.P.A.

YOUR LOCAL CLUBS, EGG CIRCLES & THE SPECIALIST BREED CLUBS NEED YOUR SUPPORT!

CLUBS—KLUBS

South African Leghorn Club.—Hon. Secretary: M. Osborne, "Lorella," Park Road, Rondebosch, C.P. Subscription, 20s. per annum.

Natal Poultry Club. — Secretary: W. H. Spears, P.O. Box 256, Pietermaritzburg, Natal. Membership fees, £1.1.0 p.a.

Bloemfontein and District Poultry Society.—Subscription 10s. 6d. per annum. Chairman: A. Strachan. Hon. Secretary: J. Kleinhans, P.O. Box 170, Bloemfontein.

Cape Town and Peninsula Poultry Club.—Hon. Secretary: F. D. Shelton, P.O. Box 509, Cape Town.

Johannesburg Poultry Club.—Hon. Secretary: W. J. Hain, P.O. Box 1173, Johannesburg. Subscription: 7s. 6d. per annum.

AN ACTIVE ORGANISATION WORKING FOR THE INTERESTS OF COMMERCIAL POULTRY FARMERS

TEPPO

(S.A.P.A. TABLE EGG AND POULTRY PRODUCERS' ORGANISATION)

Add your strength to the job . . . become a member now . . . .

Details from the Secretary:

P. O. BOX 1795, JOHANNESBURG

S.A. Australorp Breeders' Club. — Annual subscription 12s. 6d., includes full affiliation with S.A.P.A. and its monthly Bulletin, free copy of the Australorp Breeders' Handbook and yearly subscription to Poultry, Pigeon and Bird magazine. Benefits at Shows and Egg Laying Tests. Hon. Secretary, N. V. Andrews, 21, Salisbury Street, Bellville.

Die S.A. Kalkoentelersvereniging.—Jaarlikse intekengeld £1.1.0. Ere-Sekretaris: Mev. H. van Schalkwyk, Posbus 206, Bethlehem, O.V.S.

Natal Southern District Poultry Club.—Hon. Secretary: R. Lowman, P.O. Box 121, Port Elizabeth. Subscription: 10s. 6d. per annum.

Natal All Game Breeders' Club.—President: R. Harrington. Hon. Secretary: W. H. Spiers, 36 Bridge Road, Prestbury, Pietermaritzburg. Subscription 10s. 6d. per annum.

S.A. Plymouth Rock Club.—Subscription is 10/-. Join now. Devoted exclusively to the popularising of the breeding and exhibiting of this truly "World's greatest triple-purpose breed". All varieties of Plymouth Rock catered for. They are BOOMING. P. E. Baumgardt, Hon. Secretary, P.O. Box 44, Malmesbury, C.P.

Malmesbury and District Poultry, Pigeon and Cage Bird Society.—Hon. Secretary: P. E. Baumgardt, P.O. Box 44, Malmesbury. Subscription: 10s. per annum (all sections), 5s. per annum (Cage Bird section only).

Port Elizabeth Poultry Club.—Subscription: 10s. per annum. Hon. Secretary: H. C. Cahill, "Kloofs," 15 Bethelsdorp Road, Mount Pleasant, Port Elizabeth.

Albany Poultry Club.—Hon. Secretary/Treasurer F. W. v. H. Els, Box 38, Grahamstown. Special feature — Open Show held in June. Membership from 1st October. 10s. per annum.

West Rand Poultry Club.—Hon. Secretary: W. M. Butler, 3 Eloff Street, Hamburg. Subscription: 7s. 6d. p.a.

East London Poultry Society.—Hon. Secretary: A. W. Pettitt, P.O. Box 22, Cambridge, C.P. Annual subscription 10s.

Kroonstad en Distrik Pluimveeklub.—Sekretaris: D. Jacobs, Posbus 10, Kroonstad. Ledegeld: 7s. 6d. per jaar.

Strand Somerset West Poultry, Pigeon and Cage Bird Society.—Hon. Secretary: Mr. F. J. Mathews, c/o P.O. Box 35, Strand, C.P.

East Rand Poultry Club.—Hon. Secretary: J. A. Jessen, 52 St. Michael Road, New Redruth, Alberton, Tvl. Subscription 10s. per annum.

Durban and Coast Poultry Club.—Hon. Secretary: D. R. Neal, P.O. Box 4, Sea View, Natal. Subscription: 10s. 6d. per annum. Two shows held annually.

Bethlehem Pluimveeklub.—Ere-Sekretaresse: Mev. J. P. Saunders, Posbus 148, Bethlehem, O.V.S. Lede geniet volle lidmaatskapvoordele van die S.A.P.V.

South African Game Fowl Club.—P.O. Box 14, Mooirivier, Natal. Hon. Secretary: E. O. W. Gray.

The Rhode Island Red Club of S.A. caters for the Rhode at shows and egg laying tests. Subscription: 10s. p.a. Hon. Secretary: J. A. Jessen, 52 St. Michael Road, New Redruth, Alberton, Tvl.

OTHER—ANDER

Poultry Farmers' Co-op. Supply Co., Ltd.—Secretary: B. Heimann, Tokai Road, Retreat, C.P. All Western Province Poultry Farmers are invited to join.

EGG CIRCLES—EIERKRINGE

Sell Your Eggs and buy your food to feed the fowls co-operatively. Apply for membership to **The East London and Border Co-operative Poultry Products, Limited** (Registered under Co-operative Societies Act No. 29 of 1939), P.O. Box 472, 150-36 Fleet Street, East London.

Algoa Poultry Exchange. — Secretary, P.O. Box 696, Port Elizabeth.

INCREASED CONSUMPTION IS NECESSARY

WITH increased efficiency and its battle against rising production costs with lowered profit margins our egg and table poultry producers are finding that the only means at their disposal is to increase their flocks to ensure them some stability in income. This has been going on for some time with the result that production is fast outstripping demand and so the vicious circle is established.

There are ways of combating this trend and perhaps the easiest and by far the most unpopular would be the introducing of restrictions so that producers would be subjected as to size of flocks or limited to a production quota. We would hate to be mixed up in this solution.

In our opinion the solution lies almost entirely in producer prices being based on high efficiency coupled with a national effort to increase demand to its maximum by developing both the European and non-European market.

The housewife is the very lifeblood of our industry and while we have laid down grades which apply in the selling of eggs (but not in table poultry), the actual conception of an egg by the housewife has not changed for generations. An egg is still just a commodity needed in the kitchen, the same as salt, vinegar or flour, etc. It is on this need alone that eggs are sold in the quantities that are consumed daily.

So little is done about eggs that we feel more and more convinced that price changes, within reason, have very little effect upon demand. We base this contention upon a small survey recently carried out in Britain which was illuminating in that it showed that prices had to drop to a totally uneconomic level for the producer before demand was really affected and in fact demand only increased by one per cent. on each ten per cent. drop in egg prices.

Consumer education as to the dietary value of any product is expensive and the results can be heartbreaking to the promoters. For this reason we suggest that this education should be incorporated in a general scheme as it is an important factor.

We do think that those most concerned with the marketing of our products should emulate the examples set by the British Egg Marketing Board and those of Australia and New Zealand to improving the internal demand. We can assure any who tackle this job that they will receive the fullest co-operation from us.

This is a big issue and should be tackled in a big way. The poultry farmer is entitled to this consideration of his economic plight.

VERHOOGDE VERBRUIK IS NOODSAAKLIK

MET verhoogde doeltreffendheid en die stryd teen stygende produksiekoste, met kleiner winsgrense vind ons pluimvee van eiers en tafel hoenders dat al wat vir hulle sorbly om stabiliteit by hulle inkomste te verseker 'n vergroting van hulle troppe is. Hierdie proses is reeds geruime tyd aan die gang en die resultaat hiervan is dat produksie vinnig by aanvraag verbysteek en op hierdie wyse word 'n ongelukkige kringloop voltooi.

Daar is maniere om hierdie neiging teen te kamp en die maklikste en oenpopulêrste sou wees die instelling van beperkings sodat produsente onderhewig sou wees aan beperkings in verband met die grootte van die trop te beperk tot 'n bepaalde produksie kwota. Ons sou nie graag by hierdie oplossing betrokke wou wees nie.

Volgens ons mening lê die oplossing amper geheel en al daarin dat produsentepryse gebaseer sal wees op hoë doeltreffendheid en ingeskakel by 'n nasionale poging om die aanvraag tot op sy maksimum uit te brei deur die ontwikkeling van beide die blanke en nie-blanke markte.

Die huisvrou is die lewensbloed van ons bedryf en alhoewel ons grade bepaal het wat by die verkoop van eiers toegepas word (maar nie by slaghoenders nie) het die eintlike beeld van die eier by die huisvrou oor geslagte nie verander nie. Vir haar is 'n eier nog maar 'n artikel wat in die kombuis nodig is en op dieselfde peil as sout, asyn en meelblom, ens. Hierdie behoefte alleen is tot dus ver die spoorslag vir die verkoop van eiers in die huishoudings waarin dit vandag gebruik.

So min word in verband met eiers gedoen dat ons al hoe meer oortuig voel dat prysveranderings binne redelike perke baie min effek op die aanvraag het. Hierdie opinie basseer ons op 'n beperkte opname in Brittanie waarvan die resultate interessant was in so verre dat dit getoon het dat pryse moet daal tot 'n peil wat totaal onekonomies vir die produsent is voordat die aanvraag geraak word en dat toename verbruik slegs 1% gestyg het vir elke 10% daling by eierpryse.

Ons dink verbruiker op te voed in verband met die voedingswaarde is deur en die resultate kan die persone wat so 'n skema aanderf baie teleurstel. Vir hierdie rede sou ons aan die hand doen dat hierdie opvoeding ingeskakel moet word by 'n algemene skema omdat dit ook 'n belangrike faktor is.

Ons voel egter dat diegene wat betrokke is by die bemarking van ons produkte voorbeeld sou moet neem by die Britse Bemarkingsraad en die Eierrade van Australia en Nu-Seeland om binnelandse aanvraag te verhoog. Ons kan enigeen wat hierdie taak aanpak verseker van die produsente se hartlike medewerking.

Hierdie is 'n groot saak en moet op 'n groot wyse aangepak word. Die Pluimveebedryf is geregtig by hierdie oorweging van sy geldelike noed.

HOW THE BUILT-UP LITTER SYSTEM WORKS

By J. P. C. SMITH

Livestock Officer (Poultry), N.S.W. Dept. of Agriculture in "N.S.W. Agricultural Gazette"

Built-up litter as the term implies, consists of the gradual build-up of the litter from an original depth of three to four inches, achieving finally a constant depth of eight to 10 inches as droppings add to the pile.

The litter remains at this depth, excess material being removed from time to time to accomplish this. The use of built-up litter dispenses with the regular cleaning out of houses, and consequently reduces labour cost.

Contrary to earlier belief built-up litter, if properly managed, constitutes a most sanitary method of raising poultry. Shavings, sawdust meadow hay and straw are all suitable materials with which to begin. There is some evidence that a mixture of these, say shavings and straw or shavings and sawdust, is the most suitable from the aspect of friability of the litter and disease control.

One experiment carried out in England showed that mortality from coccidiosis was six per cent. lower in the shavings and straw combination than in the shallow litter of sand and shavings. Sometimes shavings, straw and sawdust becomes very dry and dusty and then water should be sprinkled on the surface to offset irritation to the stock.

Generally, sufficient moisture to keep the litter in good condition is provided by the birds themselves. Damp patches caused by overflowing water troughs or leaky cools should be removed immediately. There is no better breeding ground for coccidia than wet litter.

STIR FREQUENTLY

If watering facilities are placed inside the house the water troughs should be placed on a stand resting on the floor itself. The trough and stand should be separated from the litter by a wooden partition. Alternatively, water troughs can be placed outside the house and the birds allowed access through a grille.

The litter should be stirred frequently, especially under the perches and around feed hoppers and water troughs, so that no clumping of manure occurs. Occasionally it may be necessary to level off the litter, as hens tend to work it unevenly and leave the heavier parts untouched.

Lime is frequently added to keep the litter in a loose, absorbent condition. It helps to regulate the water content and alkalinity of the material. Kennard and Chamberlain of the Ohio (U.S.) Agricultural Experiment Station, the virtual initiators of the built-up litter system, report the successful use of superphosphate, ground limestone and gypsum, as well as hydrated lime. Growth rate, feed efficiency and viability were not affected by the different treatments but superphosphate lessened the amount of ammonia liberated by the litter. However, all mineral additives showed a rapid decline in the amount of ammonia liberated.

Liming improves the physical condition of the litter most noticeably during the first brood of chickens and little change is noticeable after later additions. Quicklime should never be used.

BIOLOGICAL FUNCTIONS

The object of the built-up litter system is carefully to control the decomposition of the litter by the presence of unaided moisture sufficient to encourage fermentation and other biologic processes. This is achieved when an ideal humus compost is developed in which ammonia gas is generated. Built-up litter provides a sanitation and self-sterilisation method in which nature's chemical biological and sanitary processes destroy harmful bacteria, protozoa and other poultry pathogens.

The complete story of the action of built-up litter on such organisms as Eimeria tenella (responsible for caecal coccidiosis), E. necatrix (intestinal coccidiosis) and Heterakis gallinae (entero-hepatitis) is not known, but the available evidence suggests that these organisms are not altogether destroyed by the action of the litter. Chickens raised on old litter receive mild infections by these organisms sufficient to build up a certain degree of immunity by such contact. Apparently there is little or no build-up in parasite numbers, poultry living in contact with the parasites without detriment to their health.

Local experience has shown that there is less risk of coccidiosis in well-managed built-up litter than in any other method of floor brooding. Further successive broods of chickens have been raised on litter which has been untreated except for liming and stirring as required. At the Poultry Experiment Station, Seven Hills, a very severe outbreak of coccidiosis occurred in 1949. The following season (about six months later the disease last appeared) 500 chickens were reared on the same litter with no deaths from coccidiosis, nor was there an outbreak of the disease in the 1952 season. It is not necessary to clean out the litter after coccidiosis has occurred provided a reasonable time lapse is allowed.

Coccidiosis rarely cause trouble when the litter is first established, the second and third batches face the greatest risk. Some degree of immunity is afforded by a light infection of coccidia, but built-up litter should never be relied on as a complete control. In any case a preventive dose of sulphaquinoxaline or nitrofurazone is advised.

Infective eggs of the large roundworm will not survive for more than three or four weeks in well-managed built-up litter, but survival periods of up to 12 months have been observed in damp patches around water troughs. Young stock should be de-wormed before transferring to intensive houses.

(continued on page 9)

Conditioning Fowls For Exhibition

Successful showing consists of having good quality fowls and showing them properly. A good exhibition specimen must have, first, a certain degree of excellence in size, shape and plumage. Excellent quality in all of these particulars except size passes unnoticed in poorly-conditioned birds.

What then, does condition mean? In some birds, it means the proper fluffy effect or looseness of feather; in other, it may mean the opposite of hardness of feather, and in still others, the American variation, for instance, a mean between these two extremes; in all varieties, the necessary weight, the health and vigour that gives a bright eye, glowing face, slick appearance and gloss of plumage.

The shape that a specimen displays in the show pen depends upon condition, for without good poise no specimen appears to good advantage and poise is in almost every instance dependent upon condition.

Condition of exhibition specimens consists of perfect health, full-developed form and plumage, but not over-development in either, the required smoothness and hardness or looseness of feather, the acquired temperament and docility to assume and maintain perfect poise, or correct carriage without which no specimen can retain the impression of form.

QUALITY HEREDITARY

In the acquiring of good or perfect condition, it should be remembered that winning quality is hereditary. Good showing qualities and aptness for good condition are just as surely transmitted from generation to generation as any characteristics of the species.

You have often observed, if you are an exhibitor, that some birds condition easily while it is almost impossible to make others acquire the smoothness of feather and the style of poise that gives them the winning quality. Both of these characteristics are hereditary in fowls just as much as good combs, strong undercolour or straight barring.

A barred Plymouth Rock male that lacks a certain amount of style should be rejected just as quickly as one that fails in undercolour, and any male that does not possess the attributes of smoothness of feather should not be considered long as a candidate for the head of a breeding yard.

TOO CLOSE COOPING

There are several methods of fitting a bird for the show pen. The best is to let the bird fit itself; the poorest, and that which is most generally used, consists in confining the bird to an exhibition coop two or three feet square and either starving it or stuffing it as the fancy of the owner dictates.

In such quarters, this bird has the pleasure of moping around for two or three weeks. It has a clean coop, perhaps, plenty of the best food and a nice bright tin cup to drink out of, but after all that has been done it is being subjected to the most unnatural life that a fowl could live.

If the cage is kept clean, the bird is clean also, but its appetite soon diminishes, its digestion is soon disordered, its feathers soon become rough, and its head loses colour. The bird deteriorates from the moment that it is put into the cage. The only advantage is that you have a tame bird.

It should be the aim to provide candidates for show honours with as near natural conditions as possible. The greatest benefits a bird can receive are derived from range conditions, but severe weather may render their provision impossible.

In such circumstances, how can we supply them? By affording the bird a chance for exercise and by compelling it to exercise if it is not so inclined, and by supplying those things of which confinement and the season of the year rob it.

Take the case of a young male bird that is to be conditioned for winter shows under conditions when protection from the weather is necessary and confinement unavoidable. Growth must be promoted and health of the most vigorous kind maintained.

The quarters are the first essential. He should be penned by himself, with one female, or some younger cockerels. In general the larger the pen, the better, but one eight feet by nine, or even smaller, will answer in most instances.

The floor should be of dry, clean sand if possible, covered with a litter of dry straw. The straw need not be cut, as the birds, if properly trained, will break it up in a short while. This litter should be from two to four inches deep, varying with the size of the birds; the larger the birds the deeper the litter.

In the morning throw in a small handful of scratch food, scattering it well. After an hour of brisk exercise, give some warm mash but do not allow them too much, because if not hungry the birds will not exercise. A heaped teaspoonful or two is about all that the average birds will consume without becoming inactive, and unless he eats this eagerly and rapidly, it is too much.

An hour or two later scatter more scratch feed and set them to work again. If the birds are immature and you wish to force them a little feed another small amount of mash at noon. An hour later a few small grains will induce more exercise, while for the evening meal a generous supply of good grain should be allowed.

It should be kept constantly in mind that rapid growth depends upon the amount of food the bird can consume and assimilate, and that exercise stimulates the appetite, aids the digestion and increases assimilation of the foods consumed, hardens the muscles and promotes the most rugged health and vigour; which facts sufficiently explain the reasons for feeding often in small portions.

(continued on page 15)

SHOWTIME —— SKOUTYD

LIST OF 1960 SHOW DATES APPROVED BY THE S.A. POULTRY ASSOCIATION

LYS VAN 1960 TENTOONSTELLINGSDATUMS GOEDGEKEUR DEUR DIE S.A. PLUIMVEEVERENIGING

MARCH/MAART	
3	Natal Poultry Club/Klub, c/o/p/a W. H. Spires, P. O. Box/Posbus 230, Pietermaritzburg. (Annual Young Bird Show/Jaarlikse Jong Voël Tentoonstelling).
MAY/MEI	
20 & 21	Caledon & Suidwestelike Distrikte Pluimvee en Duiwevereniging, Mnr./Mr. A. F. Erasmus, Posbus/P.O. Box 5 Caledon.
27 & 28	West Rand Poultry Club/Wes Rand Pluimveeklub, c/o/p/a Mnr./Mr. H. A. Marais, 73 Rail Street/Straat, Florida.
27 & 28	South African Game Fowl Club/S.A. Veglenderklub, c/o/p/a Mr./Mnr. E. Gee, P.O. Box/Posbus 14, Malvern, Natal.
JUNE/JUNIE	
2, 3 & 4	Border Fancy Pigeon & Bantam Club/Klub, c/o/p/a Mr./Mnr. J. R. Mullineux, 3 Nelson Avenue/Laan, Cambridge, East London/Oos-Londen.
9, 10 & 11	King Williams Town/Stad & Dis. Poultry Soc./Pluimveevereniging, p/a/c/o C. O. Thompson, P.O. Box/Posbus 159, King William's Town/Stad.
10 & 11	Southern Suburbs Poultry Club/Suidelike Voorstedelike Pluimveeklub, c/o/p/a Mr./Mnr. A. J. R. Stevens, 14 Ben Alder Road/Weg, The Hill, Johannesburg.
16, 17 & 18	Albany Poultry Club/Klub, Mr./Mnr. F. W. v. H. Els, P.O. Box/Posbus 34, Grahamstown/stad.
17 & 18	East Rand Poultry Club/Oos-Rander Pluimveeklub, p/a/c/o Mnr./Mr. I. A. Jones, 52 St. Michael Road/Weg, New Redruth, Alberton.
17 & 18	Malmesbury & Dis. Poultry, P. & C.B. Society/Pluimvee, Duiwe en Kouvoël Vereniging, p/a/c/o Mr./Mnr. P. E. Baumgardt, P.O. Box/Posbus 44, Malmesbury.
21, 22, 23 & 24	Natal Poultry Club/Klub (Challenge Show) and Natal All Game Breeders' Club/Klub, p/a/c/o Mr./Mnr. W. H. Spires, 36 Bridge Road/Weg, Prestbury, Pietermaritzburg.
JULY/JULIE	
7, 8 & 9	S.A.P.A. Championship Show/S.A.P.V. se Kampioenskapskou, c/o/p/a Bloemfontein & Dist. Poultry Soc./Pluimveever., Mnr./Mr. J. Kruisman, P.O. Box/Posbus 179, Bloemfontein.

(continued from page 3)

Litter which has been inadvertently wetted should be removed and a fresh start made. If the material pulverizes easily, like straw, half may be removed after two or three years and replaced with new material.

Provided the moisture content is at the desired level, the litter can be maintained for five or six years. Coarse material, like shavings, will still be "working" satisfactorily after seven or eight years.

The sale value of litter should not be overlooked, for in one year 100 hens will accumulate 1 to 1½ tons of litter. Such fertiliser has a mineral content of phosphorus 2·7 per cent., nitrogen 2·6 per cent. and potash 2·6 per cent.

NUTRITIVE VALUE

Kennard and Chamberlain have reported that chickens make better weight gains on built-up litter. Hen faeces have been found to contain more riboflavin than that found in the feed, the organism capable of this synthesis having been isolated. Vitamin B12 in one instance was shown to increase by 250 per cent. in litter one year old, compared with the original sample, chickens reared on this litter and fed a vitamin B12 deficient ration being 42 per cent. heavier than birds raised on wire. Much research work remains to be done but there is no doubt that the decomposition processes break down waste material, some of the end products being of nutritive value of fowls.

JUDGES' EXAMINATIONS

Intending Judges are reminded that the theoretical examinations for poultry judges will be held during October of this year. As usual, entries will close on the 31st July and candidates are requested to apply for application forms prior to that date.

BEOORDELAARSEKSAMENS

Ons teoretiese eksamens vir pluimvee beoordelaars sal gedurende Oktober van hierdie jaar plaasvind en voorgenome Beoordelaars word daaraan herinner. Soos gewoonlik sal inskrywings op 31 Julie sluit en kandidate word versoek om voor genoemde datum aansoek te doen vir inskrywingsvorms.

BREEDING FOR EGG PRODUCTION

Excerpts from Talks given at the 30th Breeders' School, University of Massachusetts, October 24 and 25, 1957.

Such a broad topic as the one assigned drives a speaker to two alternatives: (1) to narrow the field to one safe subject, where he can talk a lot about very little, with tables and graphs; or (2) to generalize, and talk from the top of his head, saying very little about an awful lot. I choose the second course.

So ramble along with me through the labyrinth of egg production, where one can spread quasi-genetics about various phenomena, under the guise of philosophy — and get away with it. There is only one condition — the talk is confined to brown-shelled breeds and cross-breeds (i.e., the so-called "heavies"). For I am speaking from the middle of the little island of New England, where apparently brown eggs are still preferred, though the tide washes in a few white shells, from time to time, upon the shingle and the sand.

The talk will be further delimited by observations on four inter-related aspects of the problem we share in common: (1) Purebreeds versus crossbreeds; (2) Problems of Egg Size and Feed Efficiency; (3) Viability; and (4) Egg Quality.

CLOSED FLOCK

Why purebreeds are still preferred by some is a mystery to many. The little Red Hen of fable is still in demand by egg producers. For under conditions favourable to top performance, the purebred can give an excellent account for itself, in terms of viability, egg production, egg size, feed efficiency, and egg quality (in all its varied forms). Many of our purebred New England Reds have been bred as closed flocks for 30 to 45 years. Bred usually through deliberate avoidance of in-breeding through sufficient individual male matings (25-100 pens) in double shifts, these strains exemplify the benefits of additive breeding for uniform performance; and through breeding systems of balance have consciously or unconsciously maintained a residual heterozygosity so necessary to maximum response. In a sense the genetic phenomenon of over dominance (the superiority of *Aa* over *AA* or *aa*) may well have been employed when breeders have consistently "balanced" small eggs and big eggs; low viability with high viability (i.e., livers with high livers); low body weight and high body weight; long eggs and round eggs; brown eggs and not-so-brown eggs; thin shells and thick shells; thin albumin and thick albumin. Of course, many of these are simple additives, but where non-additive effects are of value, a so-called "balanced system" of breeding has considerable value within the closed flock. Feed efficiency and freedom from broodiness can also accrue to the benefit of the pure breed "fancier".

CROSSBREEDS

The superiority of the hybrid (call it "over-dominance", heterozygosity or what-you-will) accounts for the popularity of strain crosses and crossbreds. Whatever environment is less than ideal the hybrid will perform better — in terms of viability and egg production. In some combinations, egg quality is superior, in terms of shell thickness, and albumin index; uniformity of colour and shape; and swift attainment of standard egg size.

As a matter of fact it is the special privilege of the brown-shell breeder to work in the most rewarding field of genetic experimentation — i.e., the multiple combinations possible in plumage pattern, body size, egg size and colour. It must indeed be frustrating for the white-shell breeders to work only with white egg shell and white feathers, when beneath that plumage they conceal the alleles for colour, extended black, silver, gold and the hodge-podge which is so exciting to the worker with the coloured breeds. For the sake of uniformity one can sacrifice as much. Indeed, conformity is the sin of our times. Perhaps one day the more imaginative geneticists among the Leghorn breeders will explore the still relatively unknown permutations possible between the white and brown-shelled breeds. Meanwhile, some brown egg breeders are still experimenting with the sex chromosome between white and brown egg strains. Never say die!

Speaking of sex linkage, it has long been the fashion to discount the effects of sex linkage in egg-size — despite the fact that years of practical proof illustrate that the black sex link is superior to the barred cross; the golden sex link to the silver cross, the Red-Leghorn to the Leghorn-Red cross.

Egg size has been the cross of the problem of cross-breeds — and in part of their "raison d'etre" — in New England at least. Attempts to improve reduction of body size in pure-breeds has resulted in reduced egg size. Experiments in reciprocal crosses, however, demonstrate the fact that it is possible to have been nearly identical mature body size yet quite different egg weight in these reciprocals.

BODY WEIGHT AND EGG SIZE

In purebreeds (brown eggs again) it is possible to breed birds for smaller body weight, without the accompaniment of small egg size. In studies made recently in purebred Reds it was demonstrated that of the smallest third of the flock (which fell significantly below the medium for body weight), more than one-half had significantly small egg weight. Yet the remainder demonstrated they could lay a standard egg. Providing that this group were not suppressed in body size by some unknown environmental force, this would appear to be the nucleus for a more efficient bird for the future, both

KSES

TUUR

EELDE PRODUK-
PLUIMVEE

AN SIEKTES EN
EE

VEDING

gild. Gebruik
de balans en

okrag-

at a purebreed and its crosses. For mature body weight and mature egg weight are both supposed to be highly heritable traits.

In the search for feed efficiency, however, one should be very careful not to breed from cells — from the very group whose body weight has been suppressed by in-breeding, of the semi-lethals which can appear in abundance in a homeostatic population. It is especially discouraging, too, for a breeder who has supposedly worked his population down to less than 5½ pounds to discover that controls under the backyard environment will average over six pounds. We all have a lot to learn about gene-environment interaction (or more simply termed "life in a hostile world").

This hostile world is particularly unfriendly to the domestic avian populations. Typhoid, Cholera, Pullorum, Pox, Laryngotracheitis, Newcastle, Lymphomatosis, Coli, Hepatitis, Staphylococcus, and Pleuralpneumonia like organisms — all seem organised to discourage the poultryman. Faced by this barrage of bugs it is small wonder we have any eggs at all.

Yet ability to thrive in the midst of these infections is of paramount importance. Many purebred strains have demonstrated that they can lay as well or better than any synthetic combination, no matter by what complex means they have been produced, only to succumb to a disease which the synthetic can shrug off with indifference. In the development of strain crosses and breed crosses a breeder should again stress the importance of field testing at several locations before any final evaluation of the vigour of this combination.

EGG QUALITY

Finally, any breeder who hopes to survive the competition must look to his egg quality in both purebreds and crossbreds. Crossbreeding can complicate the pattern in a bewildering variety of contradiction. Exhaustive tests of combinability should be made before a new crossbred is put upon the market, for any of the important economic traits of shell thickness, albumin quality, egg shape, and texture, and freedom from such interior defects as blood spots, and yolk anomalies.

Although breed and strain crosses generally improve eggs in shell thickness and albumin quality, blood-spot incidence may be double. One Leghorn strain crossed with our Reds, for example, was 100 per cent. free of meat spots, but had three times the incidence of blood spots compared with the Female Red Line. Cross tests of six strains of Barred Rocks with the same Red as the male line gave sex links whose blood spot incidence varied from 1 per cent. to 10 per cent. (same hatch, environment, and time of breakout).

It would seem of little value, therefore, to discover a crossbreed or strain cross which outlayed all others by 10 per cent. yet had twice the blood spot incidence.

Our new England crossbreeds stress the importance of thick shells and dark brown pigment. But in two respects this is unfortunate. (1) The meat spots tend to be darker and more conspicuous within these dark-hued eggs; and (2) the colour and thickness of shell impede accurate candling and detection of both blood and meat spots, either by simple candling or by other photo-spectrometric devices. The situation is doubly confounded by the fact that albumin quality is usually best in these eggs as well as hatchability. The only resort, therefore, is to genetics — to eliminate blood and meat spotting through selection.

Why meat spots should be classed as objectionable as blood spots, however, is a mystery to me. They certainly are not as repugnant. And viewed in the light of consumer esthetics, meat spots excite nowhere near the reaction evoked by a strong thick chalaza — which by virtue of location in the centre of the egg and thickness of mucin fibre is the last to cook in a soft-boiled egg. Perhaps, in time, through selective breeding, we can eliminate the chalaza and free the yolk from its perennial bondage.

Such is the complexity of our genetic world. So confusing that confronted by the enormity of its problems, a simple monk-like Mendel would flee from his sanctuary in remorse for all the trouble he started. In this complicated world of population genetics and statistical notation for a mass break-through of the plateaus we stroll upon in innocence. "One day we may create a pterodactyl which lays apples: a neat revenge for our loss in the Garden of Eden."

— Ray Passenter, "Featheredflax".

(continued from page 7)

Green food he should have a little of, and grit and oyster shells he should have in abundance at all times.

Birds that are very immature and that it seems advisable to force along as fast as possible may take a quite different ration from those that are grown or have ample time to grow.

The best forcing food consists of broken scratch food and a hoof and meal mash, with wheat or mixed grain for the hearty meal at night. In very cold weather a few kernels of whole maize might be given after the evening meal and last thing before the birds go to roost.

For varieties which require a glossy plumage, the fats and oils are a great help if not an absolute necessity in getting birds of certain colours in good condition. A wonderfully glossy plumage may be produced in a remarkably short time if conditions are favourable.

Besides oily food, plenty of sunlight and housing conditions that embrace dryness and very moderate temperatures are necessary.

TAMING SHOW BIRDS

A show bird should be tame, so that it does not become frightened when handled. The advantage that a bird will pose while the judge is in front of the cage and handling it has over one that gets all out of shape the moment the judge touches it is obvious.

While continuous cooping of any fowl is a crime against good condition and even against good sense, a half hour a day or so is necessary for all candidates for show honours.

The bird may be tamed quickly while cooped by offering tit-bits such as meat and kernels of whole corn from the hand. By stroking with the hand, the bird can be taught the correct pose for the show coop.— (Condensed from the American Poultry Association Year Book.)

"Poultry World."

AN EGG A DAY — THE "EPOL" WAY

The History Of Hatching

By LOYAL S. PAYNE, Dept. of Poultry Husbandry, Kansas State College.

Aristotle, about 350 B.C., proclaimed that the "large sharp eggs are males, and those which are round and circular to the sharp end are females." This philosophy was accepted by succeeding generations for about 2,000 years, or until 1713 A.D., when Louis Liger, a Frenchman, challenged the theory.

He hatched both types of eggs and determined the sex of chicks from each group. He found no relationship between egg shape and sex of chicks hatched from them.

Pliny, the Roman, writing about 50 A.D., stated that "the people of Delos were the first to cram (fatten) poultry — they originated the abominable mania for devouring fattened birds — a practice forbidden by law." However, they devised a method of evading it, by feeding poultry upon food soaked in milk. "This milk feeding makes them still more delicate," he wrote.

"The Parthians," he stated, "taught their fashions to the Roman cooks. In luxury, no article is found to please equally in every part, for one it is the thigh and in another the breast only that is esteemed."

"The best broodes," he concluded, "are those which are hatched before the vernal equinox" (March 21). So the Romans knew the value of early hatching.

The Chinese and Egyptians practised artificial incubation about 3000 B.C., which makes the art some 5,000 years old. The Egyptians used then, as now, large earth buildings with many rooms. The heat was supplied mainly from burning camels' dung.

The art, which was a closely-guarded secret, was passed from father to son. Caretakers lived in the ovens most of the time. Egyptians expected about a 66 per cent. hatch.

Fertility was determined by pressing the incubated eggs against the cheek or eye socket, the infertile eggs being cooler than those with developing embryos. This system was tried in France but failed.

BARREL "INCUBATORS"

In 1747, M. de Reaumur, a French scientist, constructed a crude method of incubating eggs in containers surrounded with decaying manure. His elaborate chambers were too expensive for the French peasants, so he fashioned hogs-heads or barrels into incubators, placing the manure underneath the eggs. The inexpensive equipment was available on most of the peasants' farms.

He developed a thermometer to maintain incubation temperature which assured chicks hatched.

In 1838, an Englishman by the name of William Bucknell demonstrated the operation of a small incubator in London. He named it the excalobion (invoker of life).

He wrote: "This most extraordinary and wonderful exhibition of production of animal life by machinery, with all accompanying interesting phenomena, is open to the public from 10 to 6 o'clock. Admission one shilling." He provided daily sessions for men of science and would break an egg every day for them to observe the rate of growth during the 21 days of incubation for one guinea.

Bucknell also offered reduced rates for school children and made appointments for noblemen to demonstrate in their homes.

Six years later, Peter Boswell another Londoner, wrote: "Except for mere curiosity, it is not worth while to attempt artificial hatching in this country.

What is now reported to be the largest hatchery in the world is located a few miles from London. It is operated by Edgar and Ralph Thornber, who a few years ago were unemployed weavers. They staked their all on a few broody hens and some orange crates. Today, they can set 1,250,000 eggs at a setting and handle 85,000 chicks per day.

Artificial incubation was begun in the United State during the 1840's. The first patent was obtained in 1843 and from then to 1900 (57 years), 203 patents were issued for special types of incubators and their fixtures.

The first forced draught mammoth incubator was built in Muskogee, Oklahoma, in 1912, by the late Milo Hastings. Its capacity was 30,000 eggs.

"HOT AIR" PATENT

The machine was never patented, as the government office informed Hastings that he "couldn't patent hot air". The method of introducing hot air was patented by Dr. S. B. Smith of Ohio in 1918.

Popularity of the mammoth incubators was delayed until large brooders and equipment were developed to handle the output of these machines.

Referring to Reaumur's book, "The Art of Hatching and Bringing Up Domestic Fowl," etc., published in 1750, we note that he speaks of hen batteries, the palatability of feed and the effect of feed on egg flavour. He notes that corn and grass affect yolk colour, that weak legs are prevented by sunlight, that sand can be used for litter, and that the use of light will increase feed consumption — feed animal protein.

He says to feed chicks when 24 hours old, do not expand beyond the food supply, that there is no best breed, that the bigness of the egg is more important than the number of eggs, that eggs from poultry are

(continued on page 24)

NEVER BEFORE could so much **Coccidiosis** protection be offered at so little cost!

ARZENE*

ARSENOSOBENZENE

Look into this!

1 Arzene prevents coccidiosis outbreaks in broilers, replacement chicks and layers.

2 **COMPLETELY SAFE FOR CONTINUOUS FEEDING TO BIRDS OF ALL AGES WHEN USED AS RECOMMENDED**

3 Permits a lasting immunity to develop.

4 Promotes feed efficiency in replacement chicks and layers.

5 Improves growth, feed efficiency and pigmentation in broilers.

6 Eliminates bloody droppings.

7 Can be effectively used in combination with Aurofac† and other antibiotic feed supplements.

CYANAMID

SOUTH AFRICAN CYANAMID (PTY) LIMITED
P.O. BOX 780, JOHANNESBURG.

Be sure to ask your miller for poultry feeds containing **ARZENE**

To: S.A. CYANAMID (Pty) Ltd., Box 780, Johannesburg
Please send me a FREE pamphlet on ARZENE.

Name _____

Address _____

*Trade Mark †Regd. Trade Mark

VITAMIN "A" — A POULTRY NECESSITY

By **K. J. STAPLES, Inspector of Stock in** *Journal of Agriculture* **of South Australia.**

All poultry from day-old onwards need Vitamin A to promote growth, health and production.

One of the best means of supplying Vitamin A is in the form of young, succulent greenfeed which has not been left to become old and stalky.

In the absence of good quality greenfeed, a Vitamin A supplement must be added in the form of a stabilised powder product or vitamized oil.

Vitamin A in the diet is essential for health of poultry of all ages, even chickens. A lack of this vitamin may cause chickens to die very early in life, especially if they are hatched from eggs coming from breeders which have been on a low Vitamin A diet. Because chickens can die without showing symptoms of the deficiency, the true cause may not be suspected and some other disease may be blamed.

However, most cases of Vitamin A deficiency, whatever the age of the birds, show definite signs of disease. Many poultry men refer to this as "roup", although actually roup is an infectious disease, whereas Vitamin A deficiency is not.

The best source of Vitamin A is young succulent greenfeed. Failing this, the ration must include a Vitamin A supplement in oil or powder form.

SYMPTOMS OF VITAMIN A DEFICIENCY

The need for Vitamin A is particularly important among young pullets coming into lay in the summer or autumn. Egg-laying increases the demands on the bird's system for this vitamin. Without adequate greenfeed of a vitamin supplement, deficiency symptoms soon appear. The birds begin to show listlessness and appear dull. The feathers become dirty, laying ceases, and the eyes become watery, later becoming glued together by this watery secretion. As the trouble progresses, cheesy deposits form in the eyes, mouth and at the base of the throat. These structures cause coughing, as the birds try to clear the wind-pipe opening.

By this stage the birds appear very miserable indeed. If the throat is opened up, it discloses numerous tiny pustules scattered all over the gullet. These are about the size of a pin's head, slightly oblong and creamy whitish in colour.

Although birds at this stage seem to be close to death, they will make spectacular recovery if neat vitamized oil is **poured down the throat** or if it is added to the drinking water. Within a few days the birds are well on the way to recovery.

This rapid response to treatment serves to distinguish Vitamin A deficiency from respiratory diseases such as fowl pox, catarrhal infections, chronic respiratory diseases and infectious laryngo-tracheitis. These diseases show similar symptoms and are easily confused with Vitamin A deficiency. None of these, however, include the presence of whitish pustules, spread over the whole gullet, which is the distinguishing feature of Vitamin A shortage.

GREENFEED HAS OTHER ADVANTAGES

Fresh young greenfeed has other advantages in the poultry ration besides meeting the bird's needs for Vitamin A. Probably one of the greatest is the way it gives a more attractive colour to egg yolks. When the birds are without greenfeed, egg yolks tend to be very pale, even though the ration contains adequate Vitamin A in synthetic form.

Adding lucerne meal to the feed helps to improve yolk colour, but it must be remembered that dried lucerne meal contains very little Vitamin A.

Besides its effect on yolk colour, greenfeed has these advantages :—

1. It helps to add bulk to the ration and consequently reduces feeding costs.

2. It provides riboflavin, a vitamin which is very important for breeding hens because it ensures hatchability of eggs.

3. It is rich in such minerals as calcium and manganese, which are poorly supplied in most poultry foodstuffs.

4. It gives variety to the diet, thereby helping to prevent or control such vices as feather picking and cannibalism.

5. It helps the birds build up resistance to worms and disease.

6. It is a valuable aid to keeping and storage quality of eggs.

HOW MUCH VITAMIN A IS NEEDED ?

The very minimum greenfeed requirements of poultry are two gallons of chaffed succulent greenfeed per 100 hens daily. Birds will consume twice this amount or more if it can be given them.

If there is any doubt about greenfeed supplies being adequate, feed a Vitamin A substitute as well. Substitutes available are stabilized vitamin powder and vitamized oil. Use these according to the directions on the containers.

Minimum recommendations for vitamin substitutes are :—

For chickens.—2,000 international units of Vitamin A per lb. of feed. For example, with an oil of 5,000 units of Vitamin A per gramme, use at least 1½ oz. per 100 lb. of feed.

For hens.—3,300 international units per 1 lb. of feed. For example, with a 5,000 unit product, use 2½ oz. per 100 lb of feed.

FREE ! !

The new 1960 list of reliable and Appeoved Breeders now available — *free* on application.

The S.A. Poultry Association,

P.O. Box 1795,
JOHANNESBURG

or

Any College of Agriculture.

●

CONSULT THIS LIST BEFORE PLACING ANY ORDERS FOR CHICKS OR BREEDING STOCK :—

SHORTEST CUT:

The quickest way to Profitable Production is to use :—

FAMILY TESTED BREEDING STOCK.

R.O.P. BANDED MALES TO HEAD YOUR OWN BREEDING PENS.

R.O.P. BRED FEMALES IN YOUR PENS.

●

GOVERNMENT APPROVED.

ALL FARMS AND STOCK INSPECTED AND APPROVED BY THE DEPARTMENT OF AGRICULTURE.

GRATIS ! !

Die nuwe 1960 lys van betroubare en goedgekeurde telers is nou beskikbaar *gratis* op aanvraag.

Die S.A. Pluimveevereniging.

Posbus 1795,
JOHANNESBURG

of

Van enige Landboukollege.

●

RAADPLEEG HIERDIE LYS VOORDAT U ENIGE BESTELLINGS PLAAS VIR TEELHOENDERS :—

KORTSTE PAD

Die snelste weg vir winsgewende produksie is die gebruik van :—

FAMILIE GETOETSTE STAPEL.

R.V.P. GEBANDE HANE VIR U BROEITOME.

R.V.P. GETEELDE HENNE VIR U TELING.

●

DEUR DIE REGERING GOEDGEKEUR.

ALLE PLASE EN TROPPE WORD DEUR DIE DEPARTEMENT LANDBOU GEINSPEKTEER EN GOEDGEKEUR.

NAGESLAGTOETSING IS DIE BESTE SELEKSIE METODE BY LÊHENNE

Deur **DR. K. MAENNEL, Landboukollege, Potchefstroom**—(*"Boerdery in S.A."*)

IN die Unie is dit algemene gebruik om hoenders te klas volgens hul uiterlike voorkoms en hul ekonomiese waarde is probeur bepaal. Hiermee word bedoel die vroegtydige vasstelling van hoë eierprodusseerders om hulle vir teeldoeleindes te gebruik. Tweedeens, word swak eierprodusseerders gedag ons die trop se gemiddelde produksie te verhoog en die voerverbruik te verlaag.

In die praktyk word verskillende seleksiemetodes toegepas. Sommige is egter minder doeltreffend as ander en om hierdie rede is met die opstel van hierdie artikel 'n poging aangewend om die praktiese waarde van elke metode te omlyn.

SKOUEIENSKAPPE

In hierdie geval word hoenders hoofsaaklik volgens die verskte eienskappe geselekteer. Onder skouenskappe word verstaan die wenslike veer-, been- en oogkleur, tipe, kop-tipe, ensovoorts, vir die ras asook die algemene voorkoms van die hoender.

Ligte gekleurde oë, sypunte aan die kam, gesplete kam, vere aan twee en bene, kroon borsbeen en gebruikbkhede word in meeste gevalle as diskwalifikasies beskou wat geensins aan hoë eier- of vleisproduksie verwant is nie. Die gerie omgewingsfaktore soos behuising, voeding, ensovoorts, waaronder skouhoenders aangebou word tydens voorbereiding vir die skou verberg dikwels ook swak eienskappe en om hierdie rede staan die waarde teler skepties teenoor die metode om teelhoenders volgens skouseienskappe te selekteer.

Skoue bevorder belangstelling en dien grootliks as advertensie, maar uit 'n teelingsoogpunt beskou word, word geringe vordering gemaak tot opsigte van die uiterlike voorkoms van hoenders. Die ekonomiese eienskappe wat vandag behoort te geniet, word verwaarloos.

In die Pluimveeafdeling op Potchefstroom is 'n ondersoek ingevoer waarby teelhoenders volgens skouseienskappe geselekteer is. Daar is bevind dat hierdie metode van seleksie onbetroubaar is in die teling veral vir ekonomiese eienskappe soos hoë eierproduksie, uitbroeibaarheid van eiers lewenskragtigheid, ensovoorts. Uit hierdie ondersoek het dit ook duidelik geblyk dat intensief van oogkleur geensins met eierproduksie gassosieer kan word nie.

EIERPRODUKSIE

Sekere fisiologiese eienskappe soos liggaamsbou, ververing geel kleurstof onder die vel van hoenders, ensovoorts, kan gebruik word om vas te stel watter henne in produksie is, asook in 'n sekere mate om eierproduksie by hoenders te **skat**. Die volgende wenke is van praktiese belang:

LIGGAAMSBOU

'n Goeie lêhen het in die reël 'n breë, plat rug wat ver na agter strek. Dit dui kapasiteit aan om die goed ontwikkelde gastro- en spysverteringsorgane te huisves. Van sulke henne kan 'n beter eierproduksie as van klein-tipe henne met smal rugge verwag word. Om dieselfde rede kan vir 'n lang regop borsbeen geselekteer word. Die borsbeen dra die eierkanaal wat by 'n produserende hen drie keer so lank is as by een wat geen eiers lê nie.

Die ysbeine wat reg onder die stertjie van 'n hoender gevoel kan word, is by 'n hen wat produseer gewoonlik (± 2 tot 3 vinger) uitmekaar en buigbaar. Daar word ook bewese dat goeie lêhenne groot maagkapasiteit toon. Die afstand vanaf die ysbeine tot by die punt van die borsbeen moet ongeveer 'n handbreedte wees en dien as aanduiding van maagkapasiteit. By henne wat nie in produksie is nie, is hierdie afstand aansienlik kleiner.

'n Groot tooi, waasrige kam en belle, asook 'n vegtige, groot aars dui ook aan dat 'n hen in produksie is.

Dit moet egter nie uit die oog verloor word dat hierdie aanduidings geen waarborg is dat 'n hoë jaarlikse eierproduksie verkry gaan word nie. In 'n sekere mate help dit boere egter om goeie eierprodusseerders vroegtydig te selekteer.

KLEURSTOF

Alhoewel in die geval van geelvel-hoenderrasse soos Wit Leghorns, Rhode Island Reds, ensovoorts, kan gebruik gemaak word van die verdwyning van die geel kleurstof onder die vel van die hoenders om die lêvermoë van henne by benadering te bepaal. Die kleurstowwe xantofiel, luteïne, zeaxantine, karotine en ovoflavine word deur die hen uit voedsels soos groenvoer, graansoorte, ensovoorts, opgeneem.

As 'n hen begin lê, word hierdie kleurstof vir die verrykering van die geel van die eiers gebruik met die gevolg dat die kleurstof onder die vel verdwyn. Hierdie verbleiking geskied in 'n sekere volgorde en begin vanaf die aars, dan die oogkrans, oorbelle en bek en daarna die bene en pote.

Wanneer die bek algeheel verbleik het, is die skatting dat so 'n hen reeds ongeveer 15 to 35 eiers gelê het. As albei shankels verbleik het, word aangeneem dat die hen ongeveer 160 tot 180 eiers gelê het of ongeveer 20 tot 24 weke in produksie was.

Aangesien kleurstofverbleiking verband het met die kruising van die hen, tyd van klassering en tipe voedsels gebruik, kan hierdie bepalings alleenlik as 'n aanduiding van eierproduksie dien.

VERVERING EN TOESTAND VAN VERE

Die snelheid en tyd van ververing kan as verdere aanduidings van eierproduksie gebruik word omdat henne nim of geen eiers lê wanneer hulle verveer.

Dit is 'n normale verskynsel dat henne aan die einde van hul lê-jaar begin verveer. 'n Tydelike rekververing

wat gewoonlik by jong henne voorkom en een tot twee maande duur, asook algehele vervanging word egter deur fakture soos tyd van uitbreek, voedingsprobleme en tekorte, boetaar, siektes, parasiete en teling beïnvloed.

Die tyd wanneer henne verveer, asook die lengte van die periode wat hulle verveer, doen as aanduidings van eierproduksie. In Suid-Afrika verveer swak lêhenne vir ongeveer 126 dae en meer en kan op lê so vroeg as Desember en vroeër. Die effens beter henne verveer gewoonlik gedurende Januarie en vroeg in Februarie. Hulle is gewoonlik vir 80 tot 100 dae uit produksie.

Die goeie henne is die laatverveerders wat gewoonlik gedurende Maart en April ophou lê en vir ongeveer 64 dae uit produksie bly, in meer gevalle en het gewoonlik die hoogste produksiepotensiaal.

Henne met vuil, verslete en dowwe vere, kaal koppe en rugge is gewoonlik ook hoë produseerders as henne wat 'n pragtige glansende veredrag aan die einde van die lê-jaar vertoon.

Deur swak produseerders geweld te verwyder en die trop aan die einde van die lê-jaar te klas, kan voedings- en arbeidskoste bespaar word en valsheidkontrole is gevolglik oorbodig.

NAGESLAGSTOETSE

Nageslagtoetse vorm die basis van moderne teelrigtings by diere. Daar is gevind dat teling volgens reeds gemelde seleksiemetodes (volgens uiterlike voorkoms) vir ekonomiese eienskappe soos eierproduksie, uitbroeibaarheid van eiers, ensovoorts, 'n geweldig stadige proses is. Hierdie metode van seleksie lewer dan ook 'n baie geringe bydrae tot genetiese verbetering van henne.

Seleksie volgens uiterlike voorkoms verwyder ook alleenlik swak hoenders, maar uit die oogpunt van groter vordering benkoe, moet die gemiddelde jaarlikse eierproduksiesyfer van alle susters of dogters van henne en hane gebruik word. Hierdie produksiewaarde wat in die geval van nageslagtoetse bepaal word, stel die teler dus in staat om 'n vergelyking tussen henne, hane en families te tref wat 'n meer betroubare aanduiding van die teelwaarde van hoenders as die individuele uiterlike beoordeling is.

Individuele eierproduksierekords van 'n hen waarborg ook nie 'n hoë eierproduksie van die nageslag nie. Al haar susters moet ook 'n hoë eierproduksie lewer en 'n gemiddelde syfer moet bereken word om as aanduiding van die teelwaarde te dien.

Die nageslagtoets is in werklikheid die beste seleksiemetode wat gevolg kan word om vordering deur middel van teling te verseker.

Samevattend kan gesê word dat seleksie volgens eienskappe onbetroubaar is wanneer teling vir ekonomiese eienskappe beoog word.

Seleksie volgens uiterlike eienskappe, is vir die kommersiële boerderyboer 'n middel om swak produseerders en siek hoenders uit te soek. Dit dien uitsluitlik as 'n middel om vroegtydig nie-produseerende hoenders uit 'n trop te verwyder om sodoende ook 'n besparing in voedingskoste teweeg te bring.

Die nageslagtoets wat op 'n wetenskaplike basis berus, is die doeltreffendste metode vir seleksie van teelhoenders en vorm die kern van hedendaagse teling.

OBITUARY

JOHN NIELSON

It is with very deep regret that we record the passing of John Nielson in his 71st year — a great loved poultryman of the East Rand.

He was highly respected throughout the Union for the soundness of his judging and held the Association's Judge's certificates for all Australorps, all Plymouth Rocks, Rhode Island Reds, Light Sussex and all variation of Wyandottes.

His greatest love was for Plymouth Rocks and in particular the Barred variety.

For many years he served on the Central Board and was also an active member on the Judges' Committee, but retired from active participation of these some years ago.

John Nielson was born on the 28th February, 1889, in Muirkirk Ayr, Scotland, and came out to the Union as a young man of 21 in 1910.

He leaves a widow, two daughters, 1 son and 5 grandchildren and to them all we extend our deepest sympathy in their bereavement.

THE HIGH ENERGY RATION CONCEPT

1959 POULTRY SCIENCE CONVENTION

By **G. L. McCLYMONT, Faculty of Rural Science, The University of New England, Armidale.**

I. INTRODUCTION

Much has been heard over the last few years of "High Energy Rations" for poultry. Unfortunately, as commonly happens with a new idea, too much has been claimed for, and expected of, these diets. Proper appreciation of their value and limitations can only be arrived at with the help of some understanding of what is meant by energy value of feeds and how food intake is regulated.

II. ENERGY VALUE OF FOODS

There are several basic concepts in assessing the energy value of foods.

(a) All the energy in feeds as may be determined by burning the feed and determining the amount of heat energy produced is not available to the animal.

(b) Some is lost to the animal by not being digested and passed out in dung. When this is allowed for the remaining energy is termed "digestible energy".

(c) Some is unavailable to the animal, even when digested, and is lost to the animal by being excreted in the urine. This particularly happens with proteins. When this energy loss is allowed for the remaining energy is termed "metabolisable energy".

(d) When food is eaten, digested, absorbed and utilised in the body, there is an energy cost of performing these functions termed the "heat increment". When this loss is allowed for the resultant energy is termed "net energy".

"Productive energy", as determined by Fraps and frequently referred to in American literature, is a modified net energy determination but recent studies have shown the values to be very unreliable and their use is not recommended.

As heat increment per unit of metabolisable energy is relatively constant in poultry, metabolisable energy, which is relatively easily determined, is the energy system of choice for evaluating the energy value of feeds for poultry.

III. APPETITE REGULATION

When animals are fed diets deficient in protein, minerals and B vitamins, they make no attempt to compensate for the low amount of nutrients in the feed by eating more of it — in fact just the reverse, they usually eat less. However, when rations are low in energy, animals attempt to compensate by eating more feed and if they are high in energy they eat less feed. That is, "energy demand" and "energy intake" are primary factors regulating the amount of food eaten. (The actual control is exercised by nerve centres in the brain which are sensitive to energy needs of the body and the energy intake.)

Within a fairly wide range of both energy content per unit weight or per unit volume of feed, birds can maintain their energy intake at a relatively constant level, eating a greater weight and/or greater volume of feeds with low energy content per unit weight or volume and less of high energy content feeds.

IV. ECONOMIC ASPECTS OF HIGH ENERGY RATIONS

The basis of the economic use of high energy rations is that, although they may cost more per ton, as the birds meet their energy needs by eating less of them, it may be cheaper to use them. Whether it is economical to use high energy rations can be determined by working out the cost per unit of energy in the low energy and high energy rations.

V. THE CALORIE-PROTEIN RATIO

The amount of minerals, vitamins and proteins taken in by birds obviously depends on the concentration of these materials in the ration and the amount of the ration eaten. If less of the ration is eaten as with high energy diets, protein, mineral and vitamin intake is reduced. So that the protein, mineral and vitamin content of high energy rations need be somewhat higher than for low energy rations. Of these, protein is usually the one to be most closely watched. Maintenance of an adequate content of protein in diets of different energy content is usually assured by maintaining a constant ratio of energy to protein content, these usually being referred to as the calorie-protein ratio, being obtained by dividing the **calories per pound of feed** by the per cent. of protein.

"N.Z. Poultry World."

EGG LAYING TESTS / EIERLÊTOETSE

GLEN

Male and Female Progeny Single Pen Test 1959/60
Haan en Hen Nageslag Enkelhoktoets 1959/60

(11th Period/11de Periode)
(10 Birds/10 Hanne)

Heavy and Light Breeds/Swaar en Ligte Rasse

	A.	B.	C.
1. Potchefstroom LK/CA (S./B.A.) ..	2,151	18	—
2. Potchefstroom LK/CA (S./B.A.) ..	2,102	50	—
3. Glen LK/CA (S./B.A.)	2,055	72	—
4. Cranksbaw, V. T. (W.L.)	2,039	178	—
5. Dundarach Poultry Farm (W.L.) ...	1,986	52	—

Heavy Breeds/Swaar Rasse

1. Cranksbaw, V. T. (S./B.A.) ...	2,315	12	—
2. Potchefstroom LK/CA (S./B.A.) ..	2,128	45	—
3. Potchefstroom LK/CA (S.1B.A.) ..	2,075	70	—
4. Grootfontein LK/CA (S./B.A.) ...	2,039	16	1
5. Peters & Sons, A. W. (S./B.A.) ...	2,015	45	—

Light Breeds/Ligte Rasse

1. Peters & Sons, A. W. (W.L.) ...	2,052	16	—
2. Strydom, I. P. (W.L.)	2,013	57	—
3. Cranksbaw, V. T. (W.L.)	1,828	13	—
4. Peters & Sons, A. W. (W.L.) ...	1,796	23	—
5. Grootfontein LK/CA (W.L.) ...	1,769	32	—

(continued from page 17)

more important than meat, that the germ of the egg is no good without the male, and that infertile eggs keep better than fertile ones.

386 OVENS IN 1750

He writes of shipping eggs from Asia to America to hatch and lists 286 incubator ovens in Egypt prior to 1750.

These statements should deflate the ego of Americans who think most of the above practices originated with the present generation.

The eminent scholar, Harvey, in his dictum written some 300 years ago, stated that, "Neither the schools of physicians nor Aristotle's discerning brain have yet disclosed how the hen and its seed doth exist and rear the chick out of the egg."

And one might add that with all the knowledge accumulated since his day no one yet knows how the blood islands in the early days of incubation are transformed, "in the twinkle of an eye", into two complete and perfect vascular systems of arteries and veins.

This fact led a college president to say, "The study of an egg can be made as cultural and scientific as the study of a star" or, we might add, a spermik.

More than 100 years ago, Charles Darwin said that all chickens originated from the wild jungle fowl of India, Gallus bankiva. But W. R. Tegetmeier, a contemporary, claimed the occipital foramen in the Cochin (Asiatic class) was perpendicular while in the Leghorn (Mediterranean class) it was horizontal, a difference that could not occur by natural selection, hence these classes must have had different origins.

Two scientists formerly at Kansas State College, Dr. D. C. Warren and Herman Smith, challenged Tegetmeier's unsupported statements. They examined very critically 245 skulls from 27 varieties of chickens and found no significant difference in the shape of the occipital foramen in the two classes of poultry.

History shows that when philosophy and gossip were replaced with critical studies in research, rapid progress was made in increasing egg production, rate of growth, early feathering, low feed conversion and many other achievements in poultry husbandry.

—"American Hatchery News."

Printed by Walker & Sendall (Pty.) Ltd., Ledger House, 5.11.24 Harrison Street, for the Publishers and Proprietors, The South African Poultry Association, Lydney House, Cor. Kerk and Gold Streets, Johannesburg.