## THE EXHIBITION MOUSE

## ALL-TIME RECORD OF 1551 FOR NMC ANNUAL AT KNOWLE <br> 4 Goodstock RED 6: 1 Hartley, grand young ster, good colour, shown well today 24 Ash, failed colour to winner 3 Skipper, slight moult and colour failed this mouse CHOCOLATE 3:1 Longbottom, good all round, bes

THE MORNING of September 26 came warm and sunny, with the exhibitors beginning to converge on the hall at Knowle from quite early, some had stayed overnight in Knowle, our old friend Ernie Higgs turned up in the early evening of Friday and offered his help with the hall, and he was at my home before he had had his breakfast at the hotel he was booked at.
Soon the hall was like an humming hive of bees, Alan Reice our hall stockman was soon on the scene getting the Maxeys in apple-pie order for the judges and stewards; it was soon apparent that no other mouse show had been quite like this, with its 1551 entries, this was an all-time record for any mouse show and will take a lot of beating, but this we all must strive to do and then our Fancy will really be going with a bang.

It was soon evident that the barmen would be kept busy as well as the judges. Ernie brought me a double whisky which I was promised 12 months right.

The farthest travellers on the day were our friends from the North, Alf and Nancy Horne, and Angus Ridley, who had made the journey by road, a good contingent from the London area included the 'double Dutchmen', father and son, Tony and Dan Holland, Tony Jones and Eric Jukes.
Tony did us proud by taking on the job of auctioneer, and this was quite a job, there being 24 trios for sale, and they certainly went down well with the fanciers present

At this point I must thank every one of the
exhibitor-fanciers who entered and made up this magnificent total and I hope that we annual trophy show, which takes place on Navember 21 . Make a note of this now. Our
schedule will appear in FUR AND FEATHER later.
Our judges, Messrs E N Smith, Don Taylor, John Kellett, Dick Espley and Mrs Doreen thanks must go out to each and every one. to was nice to see Doreen recovered from
her recent serious illness and enjoying her-
self as usual. Dick tells me he has started self as usual. Dick tells me he has started
his grandson in the Fancy now, and he did well on Saturday to take the Juvenile Trophy
and other cards. Keep your eye on
him Grandad.
Jack Cunningham got the 10 s for most entries, but I will not embarass him by telling
you his total. Perhaps a word in his ear, by anyone interested
The Mendal Trophy for best type of show went to our NMC secretary, Stuart Smith; best in show and best opposite age went to Jack
Hartley. But I will not dwell on the actual Hartley
results
We must not forget the ladies in the refreshment bar and kitchen, who kept us well
supplied with tea, etc, and a lovely lunch. Thank you to Joan, Edna, Marie, Betty and Audrey for devoted services.
The ladies also thank those members who brought prizes to raffle, Mr Cound, Mrs Wal-
lace, Mrs Bruges, Doreen Cooper, Mr Bowers lace, Mrs Bruges, Do
and Beverley Bruges.
I'm sure everyone concerned will wish me most of the booking and paper work.
The marathon annual general meeting eventually got under way in the School Main
Hall opposite the show hall and this too was soon evident of the lively interest in mousymatters. Thanks to our president, Charlie Beckett and our secretary, Stuart Smith, for
keeping order and getting through such a lot general meeting appeared in FUR AND FEATHER of October 8.
In closing we must not forget the large amount of people other than fanciers who pas-
sed through the hall during the day. Thank you for coming and showing such an interest
in our Fancy. FRED BEACH, secretary of Central England Mouse Club.

## ADULT SELF

## Mr E N Smith's classes

## Congratulations to the Central England f entries 1551 for an annual show. Our thanks go to the club and the Beach family in particular for the staging of this show. To the uninitiated the work involved is tremendous and no words of praise are too tremendous and no words of praise are too all over the country but judging, time is all too short. <br> Would it not be possible to arrange the a show day? This would give everyone then

a chance to attend and plenty of time to
discuss vital issues.
discuss vital issues. the running of the show have no chance to
take part in the meeting, and in any case the merting has to be a rush job.
Can we have this arrangement for next My personal thanks to Alan Reice the
Chief Steward and to my helpers, Miss Chief Steward and to my helpers, Miss
Heape, Mrs Hallett and Mrs Pearce. P/E WHITE or CREAM Ad 15: 13 Hallett, best colour in class, a little thin under 2
Reice, beaten by moult on nose BLACK
Ad 8: 123 Higgs, wins on colour, some tan hairs, small 2 not such good colour,
tan hairs, also small BLUE Ad 5: 1 Berry,
wins on colour, small 23 Bainton, fails under CHAM Ad 9: 1 Jones, wins on colour
and type, slight moult on nose 2 Hallett,
darker top, good type 3 Heape FAWN Ad
5 : 1 , 5. ${ }^{2} 2$ colour too, dark, fat RED Ad Ad 6:
fat 2 col
1 Hartley, perfect colour, top and under 1 Hartley, perfect colour, top and under,
wonderful feet, a young mouse, my best
Self 2 Pearce, fails colour 3 Ash CHOC 5: 1 Beach, wins on colour, real dark choc,
moult on nose 2 Shaw, lighter colour 3 moult on nose 2 Shaw, lighter colour Pearce, B/E white, fails colour and size
3 Holmleigh, dark AC SELF Chall ad 46 : 1 Hartley 2 Goodstock 3 Hallett JUVENILE
$21: 1$ Espley, nice little black, good colour and feet no tan hairs ${ }^{2} 2$ Watson, Cham,
good colour and type $3^{2}$ Pickering, Dutch, little out on saddle and cheeks, but nice
AV CENTRAL ENGLAND CLUB MEMBERS
88: 123 Hartley. E N SMITH

## EIGHT WEEK SELF

## Mr D Taylor's classes

This years NMC Annual show was held at
Knowle on September 26 with England Mouse Club. Many thanks to all exhibitors who helped
to make this a success. An entry of 1500 makes work worth while.
My only regret was at not being able to attend the annual gen
judging being so late.
Many thanks to my stewards, in particular
Mrs E Smith who stayed with me all the
wh
 change 3 not as good under AV Chall 67: Hartley, Red 2 Horne, Fawn 3 Martin, White
4 Higgs, Black STUD BUCK 28: 1 Smith, Argente 2 Cunningham, White ${ }^{3}$ Goodstock, Chin 4 Beach, blue Tan TEAM 10: 1 Higgs,
Black 2 Pearce, BEW 3 Horne, Seal Point 4
Reice Blue Reice Blue LEICESTER MEMBERS 31:
Martin, White 2 Bagshaw, Fawn 34 Beach.
DON TAYLOR

## MARKED

## Mrs D Cooper's classes It was a delight to see such a large gather- ing of fanciers at 'the Annual' at Solihull. Janine Beach, who organised the show, ing of fanciers at 'the Annual' at Solihull. Janine Beach, who organised the show

 must be admired for the way she kept calm(and looked so chic') throughout the long day.
youn day.
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young
The
times ng, and she did it very well. times, but 1 am sure everybody and hectic a was sorry to learn that Mr Eric Kitchen had been taken ill again. We all wish him a
speedy recovery. Many, many thanks to stewards. Dutch were of varying quality. The Brokens were a mixed lot really. Some of
them would have made good Evens but, of course, this meant they should have been The under the AOV Marked.

## colour, far too creamy and with too much shading at rear, although they retain their wonderful type. I have about fifty in my shed

 and am aiming to breed some which are 'aswhite as possible' which is to standard The Rump Whites are making good Going back to the Dutch mice, I can't help feeling that it is a good idea to stick to the
dark colours (blues, blacks, chocs, agoutis) because on the lighter colours, (argente
dove, fawn) there are usually no foot stops or dove, fawn) there are usually no foot stops or that they must be present. The judge has to deduct five points right off for non-existent stops.
In
with very good chere lighter coloured Dutch no stops or tail mark, which was a pity Surely it is better to breed a Dutch dark if poor) than to breed Dutch without any stops visible because the colouring is so light
that they don't show up. tion is made of the marking of the tail, but
in the black and white plate it states that the tail must be flesh-coloured halfway. Curious! DUTCH Ad 12: 1 Maynard, cinnamon cheeks and blaze good, saddle well up,
slightly ragged, good undercut 2 Maynard, agouti, pull on left cheek extends to whisker
bed, saddle well up, good colour, very close bed, saddle well up, good colour, very close
to winner 3 B Longbottom, black, excellent
cheeks, very young adult and a bit wild jet black and lovely condition 4 Pickering, choc,
pult on left cheek, fair saddle and under, fair stops, very fit 8 wk 14 : 1 Jukes, cinnamon,
good all rounder, only fault cheek mark too good all rounder, only fault cheek mark
far under chin 2 Maynard, cinnamon, saddle
perfiect under, good cheeks but they extend too far under jaw, top saddle well up 3 Mis Hooper, tiny cinnamon, slip on right side of
saddle, good cheeks, good stops and fine blaze 4 Cookes, argente, nice even cheeks saddle a little wavy, no tail marks, no stops
BROKEN Ad 7:1 Cound, nine-spot, very pleasing arrangement of spots, no brindling here 2 Mack, six-spot, lovely shaped patches
but more even than broken, needed one more patch to make a super even 3 Maynard, seven spot, good size and condition, more evenly mated thine-spot, attractive but heavily brindled at rear, good strong mouse 8 wk 7 Heywood, eight-spot, even at ears, nice clea spot, a very near miss, l'Il bet the owner jumped when he saw the markings appearing on this one 3 Mrs Mack, six-spot, clear cu
spots but a little even in position 4 Maynard spots but a little even in position 4 Maynard, seven-spot, good nose patch, colour, clean AOV MARKED Ad 10: 13 Cunningham, Himalayan, good points, lovely
type, strong whippy tail, body colour a little too creamy and shaded 2 Cookes, Himalayan good all rounder but again body colour a bit
too creamy 3 Himalayan, good broad skull and typy, points good except on back feet
Horne, Agouti Rump White, good top and

5: 1 Mackerill. Himalayan, practically white body and good points, real baby 2 Cunningham, Himalayan, big boned, typy, good points and fair body colour 34 Cookes,
Himalayan, points not through properly yet slight moult on back 4 Himalayan, nice typy fit mouse but too young for points to be clear
AV MARKED Chall ad 22: 1 Cound 2 . 3 May-
nard 4 B Longbottom, Dutch 8 wk 25: 1 Jukes nard 4 B Longbottom, Dutch 8 wk 25: 1 Jukes
2 Miss Hooper 3 Heywood 4 Mackerill AV Doe ad 45: 1 S Smith 2 Goodstock 3 Halletts 4
Hartley 8 wk 44: 1 Hartley 2 Jukes 34 S Smith Breeders ad 62: 1 S Smith 2 Higgs 3 Goodstock 4 Bainton 8 wk 65: 12 Hartley 3 Jukes 3 Cound Grand chall ad 121:1 Hartley 2 S Smith 3 Higgs 4 Jones 8 wk 1
3 Horne 4 Jukes. D COOPER

## BEST IN SHOW AT A GLANCE

## The mice brought out for me to find best

 in show were a Self Red, a dove Tan,a Dutch, and an under eight week Agouti, a Dutch, and an under eight week Agouti.
My first glance through found the winner, this was the Agouti. It had good colour with plenty of ticking, a good eye, nice type and beautiful condition. The only thing This was just a shade lighter than rest of under. It was owned by J Hartley.
Next was the dove Tan, owned by E dark. It had a good eye, fair on tan. A good runner-up.
Third was the Dutch, not a flyer by any stops were good, under was only fair, left cheek runs under jaw, owner E Jukes. Fourth, Red, $J$ Hartley, top colour I
thought too dull, lacks sparkle, fair under, thought too dull, lacks sparkle, fair under, patch on the usual Reds from this stud.

## TANS

## Mr R Espley's classes

It gave me great pleasure to judge along with Doreen Cooper, Don Taylor, John Kelnot seen for a long time. I was pleased to see both Mrs Smith and Eric looking so well. I feel sure secretary
Fred Buck and his committee must have been , pleased with the entry of over 1500. I would thank fanciers who supported my
classes so well, also my two stewards Harry classes so well, also my two stewards Harry
Jowett and a youth whose name I did not The quality of the mice was very good. Two mice which took my eye were a young
adult dove of Ernie Higgs, and a cham buck adult dove of Ernie Higgs, and a cham buck
of Tony Jones. The blue classes were a big surprise both classes and many good mice had to go TAN BLACK Ad 8: 1 Heywood, doe, good
feet, colour and tan 2 Higgs, buck, good
size, colour and tan, just beaten feet 3 Sill, feet, colour and tan 2 Higgs, buck, good
size, colour and tan, just beaten feet 3 Sill,
doe, beaten tan and feet 8 wk $6: 1$ doe, good colour and feet, hardly as good
$\tan 3$ doe, beaten feet and tan BLUE Ad 21: Heywood, good colour, tan and feet 2 Sill, tan and condition 8 wk 12: 1 Bainton, good Holmlea, another good one, good feet 2 Holmlea, another good one, just beaten
feet 3 Bainton, beaten feet and $\tan$ CHAM Ad 5: 13 Jones, wonderful buck all round, to be tan $8 \mathrm{wk} 5: 1$ Hartley, nice colour tan and 3 Jones, beaten tan, nice top colour AOC Ad 12: 1 best Tan Higgs, young adult dove nomination for best in show 2 Sill, choc,
nom nice colour, $\tan$ just beaten feet 3 Jukes,
silver, beaten top colour 8 wk 12: 1 Higgs, baby dove, very nice all round, should be and tan, beaten feet, well up to age 3
Holmlea, silver, nice colour and feet, beaten $\tan$ AC Chall ad 44: 1 Higgs 2 Jones 3 Heywood 8 wk 35: 1 Harlley 2 Higgs 3

## ANY OTHER VARIETY

## Mr J Kellett's classes

A very ambitious classification brought a grates total entry of 1 to be followed by an auction class and the annual general meeting.
As judging was not completed until 5.40 pm I regret to say that the judges and various
stewards saw little or nothing of the annual general meeting
I judged the AOV section and the quality
was good. Chinchillas generally had good top colour and good white unders, even the does.

## Some were too fat and all had various mou

 mars. colour and ticking. Sables are greatly improved, usual faults Seal Points were improved for size and type, points were good but most were notshaded. In my opinion the shading was shaded. In my opinion the

Argentes were few but good.
All but two of the Foxes failed on unders. My young Agouti winner went on to
best in show and was owned by J Hartley.
AGOUTI OR CINNAMON Ad 10: 1 Hartley, Agouti, grand colour, a bit baggy on sides
23 Reice, silver Agoutis, good colour and ticking, slight moult 8 wk 5: 1 Hartley, Agouti best in show, should make a smashing adult Agoutl, also failed under CHIN OR FOX A
15: 1 Longbottom, Chin, very good, sligh moult 23 Mack, Chins, second young adult
buck, a bit fat 3 failed on moult and under 8 wk 7: 12 Davis, black Foxes, good, almos like twins 3 Longbottom, Chin, broken coa ARGENTE Ad 4: 122 Smith, lovely type and
condition 3 Byworth, slight kink tip of tail
8 wk 4: 2 Smith, two very good ones 3

## BREEDING METHODS

On page 985 we continue our series on Breeding Methods which will be of great value to all small stock exhibitors-mice fanclers included. Read it, digest it, get acquainted, if necessary with a few new words, then keep it for future reference The series will be continued in our next issue

ON NOVEMBER 5.
If you have news for that issue or the following one on November 19 please post it now.

Byworth, failed on colour AOV Ad 12:
Horne, Seal Point, had the best feet 2 Ridey
Sable, small, a young adult, usual nose spo 3 Heath, Sable, very close 8 wk 11 : 1 Ridley Sable, excellent youngster 2 Sheld, Seal
Points Chall ad 37,1 Smith, Argente 2 Hartley, Points Chall ad 37: 1 Smith, Arsente 2 Hartley,
Agouti 3 Horne, Seal Point 8 wk 23: 1 Hartley,
Agouti $\begin{array}{ll}\text { Agour } \\ \text { DARDISED } & 3 \\ 9: 1 \\ \text { Sidley, a }\end{array}$ Idid not get the name, two nice lilac Foxes
with lilac feet 4 Byworth, Silver Blue AV Ladies 23: 12 Mrs Horne, 'Seal Points 3 Mrs
Cook. Himalayan Pet $9: 12$ Mack 3 Linstead. J KELLETT

## NMC NOTTS

New club: Mr R E Cound of Sheffleld is
interested in forming a new club in the interested in forming a new club in the
Sheflield area. The club will start by running its first show on October 17 along with Sheffield Original Fanciers rabbit and cavy
show. So it will have had its baptism by the show. So it will have had its baplism by the
time these notes appear. I hope it was a
success and will continue in the future. I am sure Mr Cound will appreciate any hel and support he can get.
Eric Kitchen: I would like to correct my
statement in the last issue of FUR AND statement in the last' issue of FUR AND
FEATHER, about Eric's health. He did not FEATHER, about Eric's health. He did not
have a stroke but he suffered a coronary
thrombosis. He is now in ward 8 of the Bradiford Royal Is Ifirmary and 1 am sure
would appreciate letters from fanciers althoug Corre report of the annual general meeting: In my
general meeting please read Mr Lomas instead of Lowes; Mr Mr cound
instead of Coard. The reported Walter Money
trophy.
to mers in mice: A young member has written mice which have developed growths or tumours. She asks dit these can be cured. Whilst a veterinary surgeon may be able suggest destrot it ing ituable one I would
crop up at irregular intervals ins seem
simost to elliminate the only way, in my opinion, toffected mouse. S SMITH, secretary.

## The fancy mouse, By A C Jude. This book by a former president of the National Mouse aspect of breeding, showing, management aspect of breeding, showing, management, colour inenitance and simple genetics is fully covered. Price os 4 d posi paid. (Full fully covered. Price 8s 4 d post paid. (Fuli cloth. FEATHER, From, Book Depte, Bradford, Yorks. FRR AND

## SPACES BETWEEN THE MAXEYS <br> ALF HORNE

Now I am going to have a go at our secretary He will probably say I should have written to him privately on the following matter
but I know he will take it in the spirit it is meant.
always make a point of reading the list of new members and if there are any in this
area either Angus or I always drop them a area eilher Angus or jalways drop them a
ine of welcome, but just recently we have only had the name and town published. Please give the full address if possible because maybe some other members follow our practice in other parts of the country.
I like to think they will anyway.
Our secretary appeals for items from fanciers, I notice a new fancier in the list included give us a new slant on things if they would put pen to paper
My articles are not very constructive but do drawing ill up our page, I purposely keep o stimulate herrings across the path to try When Percy Ashley was secretary we were spoilt really because he contributed so much that we came to expect the same contri and I am sure we all appreciate the fact
that Percy, being retired, had far more time vailable than a young, wife and family and other interests making demands on his leisure, so may I say

## Readers write

THEVES WHAT is it like to have your shed broken
into, and some of your best mice and show
cages stolen in comparison with a few taken cages stolen
at the shows.
This happened to me on Tuesday morning September 15 when I found the door of my mousery had been forced open. Boxes were luck would have it I had a witness to verify what had happened and I immediately informed the police. may concern. May your fingers never steal anything aga
not prosper.
also have this to say to the person or persons concerned. You knew which were some of my best mice, including winners a
Guildford and Greenwich. They included Self blacks and Dove Tans
We hear a lot of talk of trying to better he Fancy. There will soon be quite a few fanciers leaving the Fancy (and that would be
a sad day) if this state of affairs keeps happening.
How easy it is to steal mice and win with them. But I warn everyone I shall be on the ook out for the so-called slick gentlemen and
others until he or they are caught. There will be no peace of mind in anyone's mousery or at any show.
I have been in the Fancy too long for any-
one to break my spirit. I say with all sinone to break my spirit. I say with all sin
cerity to those who have had mice stolen at shows. Don't let the thief break you with
this mean jealous streak, for that's all it is. In 1953 to 54 I was doing well with Cinnamons. On five occasions I had mice missing
from shows, so you see it has happend before and it will keep on happening but to put forward by the executive committee o the National Mouse Club. This is far more important than burning the candle far into
the night at the annual general meeting on rules that can be broken. ERNIE HIGGS

## INCREASES ARE NECESSARY

FOLLOWING a further increase of twelve
per cent on carriage charges for small livestock, making a total of sixty-two per like to see the following changes made in order to bring the mouse Fancy in line with it's rabbit and cavy counterparts.
Increase entry fees for breed classes to
sut keep the is entry fee for all duplicate classes including section chall$10 \mathrm{~s}, 6 \mathrm{~s}, 4 \mathrm{~s}$, and 2 s (optional). I have to send by rail. These increased
charges probably won't deter the keen charges probably won relatively well. They will certainly affect the novice, who can't and so a few shows costing him the star 30 s to $£ 2$ and so a few shows costing him 30 s to $£ 2$
a time will soon put him off. Perhaps these changes might give him greater incentive. At least I hope so.
Another point I would like to raise is that of postal charges. These will soon be going
up quite substantially and unless regional
devotion and the time given to his task. No doubt he has had pleasure and satisfaction from carrying out the duties he
volunteered to do, but at the same time I am sure an occasion musi have arisen when he has thought he could well do without this, that, or the other, and I think it would be wrong of us to expect him to fill FUR AND FEATHER each week.
know there are some fanciers who have a
wealth of knowledge but who decline to wealth of knowledge but who decline to
write to FUR AND FEATHER because they Write to FUR AND FEATHER because they
think their articles would be in bad English and spelling errors would detract from what they had to say. That's a laugh when you recap on some of the stuff I have sent in in the past. To my way of thinking it would be a sinful waste if this knowledge were know if a fancier has a problem he can be recommended to write to so and so for a specialist answer, and that he will get a satisfactory answer, but, only the questioner o I would suggest that if you have any FEATHER and I will fancier I think will supply an answer and will publish his reply. In this way as so often happens some of us who didn't realise we had a problem until someone else
brought it up, will be able to take another step forward.
clubs put up their subscriptions they will be nable to afford to send out newsletters etc. The same of course applies to the NMC and so l can see nothing for it but to
increase club subscriptions to at least 5 s with preferably reductions for senior citizens and genuine juveniles.
knowledge of running a club and shows could give their opinion club and shows ideas should and, above all, could be put One final question, wh
Onal
what has happened to Would the writer of this letter please signature was indecipherable.

## SHORTAGE OF ENTRIES

THE Carlisle secretary, in his list of awards, did we keep the mice at home? It would be interesting to know how many
of the exhibits came by rail. This show was in an area where almost everyone was on an equal footing and those who wished to support had no option but to send by rail. Those who are lucky enough to live near the shows get by with just a short bus or train ride on the morning of a show. So this time, h
Our two exhibits cost 18 s in rail charges, and as we are old-age pensioners we cannot Our kind of people and the juveniles will
just have to stop exhibiting. We supported all Just have to stop exhibiting. We supported all
four mouse shows during September with following balance sheet: Entry fees 3is prize money 32 s , rail charges 80 s , which showed a loss of 81 s . age bird fanciers have sat down to a sixty-two-and-a-half per cent rise in charges over
the last ten months without one word of protest is beyond me. National Mouse club annual show at Birmingham on September 26 had an entry of 1500 and it would be nice to know how many exhibits came by rail. Perhaps Mr Beach will let us know.
At the
an agenda as asual meeting of the NMC, with alities-no mention was mad sing what could be done, if anything, about rail charges. They are sounding the death nell of the mouse Fancy. LEONARD
MARRIOTT, Boston.

## FROM THE MOUTHS OF

haps a can give an answer to Mr D Montgomery's problem about his does eating
young (FUR AND FEATHER, September 10). He states he feeds them September 10). whereas most mouse books advise not to stock causing parents to eat young.
My main breed is black and Tans of which do a bit of showing and breeding. PHILIP

## AFFABLE HAMSTERS

## N WALLACE

UST about the most popular small pet these days is the Syrian hamster. More commonly not strictly correct as the hamster is no longer found solely in its golden form.
here are now white, cinnamon, cream, fawn, sepia, honey, yellow and, our latest colour, grey hamsters. there are patterned hamsters such as piebald, tortoiseshell and banded. introduced to the Fancy. This is the satin coated hamster, a most attractive fellow with a glorious silky coat having a high gloss finish
When one considers that all the pet hamsters their combinations stem from one golde female and her litter which were captured on being dug out of their burrow in the sands of Aleppo one realises what fantastio progress has been made in the hamster fancy.
Ilshed mutations are constantly being estab ished. This is one of the factors which I ster breeding so very interesting in hambeing made t the present times. This is comparatively young fancy and now time to join in

The hamster is an affable little animal and tion. In our hamstery, the hamsters are housed, separately of course, in simple 8 in high cages 12 in $\times 12 \mathrm{in}$. Each cage is 8 in high at the back sloping to 4 in at the front and with a hinged lid of twiweld
mesh. The cages are stacked on wooden racks and it is simplicity itself to attend to the needs of the occupants.
form of are very easy to feed. Food in the form of a dry mixture need only be pro vided every other day-water should alway advantage when avenising on to used to ary much appreclated should be ted reqularly when obtainable. Carrots are particularly relished and can be given to the stock at least once a week The hamster stores food near to his nest been fed well can exist for several days in his 'larder'
great attribute in favour of hamster keeping is the almost total absence of any oliensive odour in the hamsterl. The cages should be cleaned out weekly removing the hamster for a toilet. A complete clear out Is recommended every two or three weeks, when the bedding (soft hay or tissue paper) should be renewed.
This is all that is needed to keep the cages clean and fresh-a great deal simpler tha
keeping rabbits, cavies, etc.
> in fact, are very easy to breed and have, in fact, one of to the birth of a litter it takes the female a mere sixteen days!
> and can safely we youngsted at four weeks ol a hamsters are ideal for the livestock breeder seeking quick results.
> and amend that the more serious breeder one of the hamster to exhibit, should join time there are three clubs which between them cater for hamster owners throughou
England, Scotland and Wales. requires further information on ioining these keeping or in fact on any facet of hamste My address a stamped addressed envelope Hatherley Chit Up

## Miss P STURDY and Mr N wallace

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## EXHIBITION TYPE HAMSTERS

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# METHODS <br> FOR THE PRACTICALNUMBER 2 OF A NEW SERIES by R G SILSON <br> FERTILISATION. Fertilisation occurs when a sperm meets an ovum under the correct conditions. The 

ZYGOTE so formed can then grow into an adult.

F1, F2 etc. An F1 is the progeny of mating two parent lines differing in one or more genetic factors. An F2 results when two F1 individuals are mated (or perhaps self fertilised in plants). F3 means progeny of two F2 mated together and so on. The F1 individuals are often very much alike but F2 and later can be very different, especially if many genes are involved. They can be and often are effectively 'mongrels' as opposed to backcrosses which can be effectively purebreds.
GAMETE. This is a cell which contains a half set of chromosomes ie a sperm or an ovum.
GENE. From the practical breeders point of view a gene is the smallest part of a CHROMOSOME. It will be discussed in greater detail in a special section. The position of a gene on a chromosome is known as its LOCUS (plural LOCI). At each locus several alternate genes, ALLELES, may be possible. Since chromosomes are in pairs TWO alleles are possible in each individual at each locus. These two may be alike or different. If different the effect of only one allele may be seen. This allele is then said to be DOMINANT over the other. The one which does not show is RECESSIVE.

If several alleles exist they may be arranged in a dominance series. ONE dominant to all the others. TWO recessive to ONE but dominant to the remainder and so on. Some alleles may have similar dominance so that an unlike pair may show an effect intermediate between two like alleles of one kind or the other.
DOMINANT and RECESSIVE
describe alleles at ONE locus. If genes, at different loci, interact the effect is called EPISTASIS. Recessive epistasis is often named HYPOSTASIS and EPISTASIS used for the dominant effect.
If the effect of two genes add, at the same or different loci, they are said to be ADDITIVE. Strictly the effect of all genes is probably additive but if a very weak gene acts with a very strong one it may be difficult to see the effect of the weak one which is, thereby, RECESSIVE.

GENE POOL. A single individual carries only two ALLELES at each LOCUS of its CHROMOSOMES. These alleles may be similar or different. The total of all the individuals in the species may carry many different alleles. A breeding programme may suffer because too many unwanted alleles and too few wanted alleles are included in the population being selected. The breeders aim is to eliminate unwanted alleles without losing wanted ones.
The sum of all the alleles available is called the gene pool. Cross-
ing breeds, within a species, will normally increase the pool of both useful and useless genes. Inbreeding will decrease the gene pool ultimately to only one allele per locus. The main theme of this series is to ensure that the final gene pool is the right one.

GENOTYPE. The way an individual looks and behaves, is called its PHENOTYPE. However the qualities of its progeny depend on its GENOTYPE and the GENOTYPE of its mate. Many champions produce mediocre progeny and many mediocre parents produce champion progeny. Genotype is the total pion progeny. Genotype is the total of all genes carried by an individual many of which are recessive
and hidden behind the phenotype. There are also other aspects which will be discussed in detail later.
GRADING see BACK CROSS.
GROUP. This word is used here to mean a group of FAMILIES which share one or more common grandparents. See also PROGENY TEST. HAPLOID. The sex cells, ova and sperm are haploid. They contain half the DIPLOID total ONE of EACH pair of CHROMO. SOMES. However, especially in plants, it is possible to have individuals with all cells haploid. These individuals can be a useful breeding tool.

## HEMIZYGOUS see ZYGOTE.

HETEROZYGOUS see ZYGOTE.
HOMOLOGOUS CHROMOSOME. Homo means 'same'. Thus the two chromosomes of a pair are homo logous and also similar pairs in other individuals. Homologous chromosomes are not identical since they will usually contain many different alleles.

## HOMOZYGOUS see ZYGOTE.

HYBRID. This word is used very loosely. Originally it meant a cross between two species but now commercial breeders of maize and poultry have used it to mean strain crosses, especially when the strains are inbred. Some fanciers even use it to describe single gene differen ces but this is somewhat extreme.

HYPOSTASIS see GENE.
LETHAL. Some gene ALLELES produce effects which kill an individual at an early age. They are usually recessive but may be dominant if they kill after reproduction or if new MUTATIONS.

SEMI-LETHALS do not kill but may reduce growth rate, fertility etc, so that the individual is much less efficient than normal.
LINE. Related individuals are often called a line or a strain. The relationship may be very close as in an inbred line or be merely the in an inbred line or be merely the
result of breeding for several generations within a population of restricted size, a few dozens rather than a few thousands, with few or no outcrosses

LINKAGE see also CROSSING

OVER. One of the main problems of breeding is linkage. Suppose we have 100 red beads and 100 blue beads mixed 100 on each of two strings with a red always opposite a blue. If now we want to get all reds on one string and all blues on the other and can do it ONLY by breaking both strings at the same point and crossing them over and rejoining opposite strings we have the same problem as the breeder only he cannot see his genes on his chromosomes. The problem isn't as difficult as it might seem and it will be discussed fully later.

## LOCUS see GENE.

MAMMAL. The group of animals that includes most domestic species as well as man himself. They are all warm blooded and feed their newborn young on milk produced by the mother. See ANIMAL.
MENDEL. Gregor Mendel lived from 1822 to 1884 . He was the first person to realise that heredity is controlled by individual particles, now called GENES, and that these did not blend but reappeared in later generations completely unaltered. His experiments were published in 1865. Modern genetics is based on the principles he discovered, which have been extended to cover all aspects of inheritance.
MULTIPLE ALLELES see ALLELES.

MULTIPLE CROSS. A cross of several breeds or lines is often useful eg to form a GENE POOL or to produce commercial crossor to produce commercial cross-
bred progeny. Two crosses $A B$ and $C D$ can be combined to give ABCD or $A B$ can be crossed with $C$ to give $A B / C$. For best results it is sometimes important to use a special order of crossing.

MUTATION. Most GENES are reproduced exactly in new ova or sperm. However occasionally, about once in 100,000 or so, an error occurs which gives a new ALLELE. This allele may be completely new or may be a repeat of one already existing elsewhere. Mutations are usually disadvanta geous, some may be LETHAL.
NUCLEIC ACIDS. There are FOUR nucleic acids. They are the building blocks of GENES.

OPTIMUM. This is an important concept which has suffered from neglect by breeders and geneticists. The very best individual is one that has optimum values for all its component parts. It must be in balance. These optimum values will usually be at an intermediate level amongst all possible values. In general terms the best individual is one that is average in all respects including those components of its biochemistry which are invisi ble. This argument appears to be a contradiction in terms but as the
story unfolds it will be seen to be true. This concept explains many of the problems found by

P, P1, P2. These titles are used as abbreviations for parent lines in a breeding programme, especially in relation to F1, F2 etc.

PHENOTYPE. The appearance of an individual as opposed to its breeding qualities. See GENO. TYPE.

## PLANT see ANIMAL

POLYGENES. Simple MEN. DELIAN genetics describes genes of strong individual effect. Most aspects of living things require a much more delicate control. This sensitivity is achieved by several genes, each of small effect, controlling each detail of the organisms requirement. These genes are usually ADDITIVE and they are called POLYGENES. (poly $=$ many). They are the main theme of this story.
POLYPLOID. Normal cells contain two of each kind of chromosome. They are DIPLOID. Ova and sperm contain one of each. They are HAPLOID. Under some circumstances cells may contain more than two of each kind of chromosome. Those with three of each are called TRIPLOIDS. Those with four TETRAPLOIDS and so on. The general name for these is POLYPLOID. Most polyploids have difficulty in reproduction since the genetic system is designed to give half to each sperm or ova and can't decide which chromosomes make the half. However in plants, rarely in animals, tetraploids and hexaploids (six) are not uncommon. The process is as follows. A sterile hybrid is formed between two species which is otherwise healthy. It grows normally but cannot produce seed. However as it grows a cell fails to divide and becomes a tetraploid. however since the plant was a species hybrid it is really a diploid of a new species. It grows further and produces seed and a new species begins which is separate from either parent. A triploid can be produced by the fertilisation of a parent. This again will usually be sterile but doubling due to faulty division and a fertile hexaploid starts. The method has been used artificially by breeders and happens in nature on rare occasions.
POPULATION. A population is a number of individuals which have no natural barriers to interbreeding eg a flock of domestic animals or a wild species on an island. A very large population can have barriers due to distance. If no new individuals are introduced the population is said to be closed. Most populations are not fully closed as happens when the breeder introduces an outcross.
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(To be continued)

