Bulletin 236 July, 1951

University of Arizona
COLLEGE OF AGRICULTURE
AGRICULTURAL EXPERIMENT STATION

PART I

ESTABLISHING A HIGH EGG PRODUCING STRAIN OF S.C. WHITE LEGHORNS

PART II

THE 365-DAY EGG PRODUCTION EQUIVALENT TABLE

By H. EMBLETON

Agricultural Experiment Station
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LITERATURE

Marble and Hall (2) showed that: "With careful selection, both the body weight and the egg weight increased simultaneously with the increase in number of eggs. Rigid selection overcame the normal tendency for egg weight and body weight to decrease with increased production. That rate of maturity changed directly in proportion to the change in productions. Change in egg production in the lowline birds probably measured, to a degree at least, the effect of improved methods of feeding and management."

F. C. Elford (3) states: "The factors affecting egg production are still incompletely known and inadequately understood. Little knowledge or agreement exists even on such a fundamentally important point as the comparative effects of environment and heredity. In attacking the problem the existing knowledge as to the manner in which complex characters such as egg production are inherited was thoroughly analyzed. The results of the analysis indicating not only that inheritance played a smaller part than environment in the determination of individual and familial variability but that the increases which have occurred in mean yearly egg production during the past two decades must largely be due to improvements in feeds and management.

"The conclusions thus drawn from the application of known principles of inheritance to the actual problem were further supplemented by a detailed analysis of pedigreed records from experimental farm flocks and egg laying contests which completely verified the conclusions previously reached."

D. C. Warren (5) feels that: "In breeding for increased egg production the influence of the environment is a very serious handicap because environmental features such as nutrition, parasites, or disease infection either during the growing or laying period may materially influence a pullet's productive performance. A female may have the inherited tendencies for laying over 300 eggs but if she is subject to unfavorable environmental conditions her production may be less than 100. As a breeder she might be considerably more valuable than a hen that has laid many more eggs, but her value will not be recognized if one depends upon her egg record, alone.

"I am not one who believes in the absolute uselessness of mass selection. As an only method of flock improvement it does not give very prompt results in an individual flock. However, when applied on a large scale over the country in general it should be, and I believe has been, an important factor in flock improvement. By mass selection I mean mating of best x best without any particular attention being given to family performance as is the case in the progeny test. So I believe that the mating of the higher producing hens to the sons of high producing hens should in time give some improvement in egg production although this method is conceded not to be so effective as the progeny test."

Hays and Sanborn (7) state that: "Progress is observed in selective breeding of Rhode Island Reds for characters affecting

high fecundity. Most of these characters are of rather complex genetic makeup. Early sexual maturity has been well established at a mean of about 190 days when birds are hatched in March and April. Intensity is still variable and the object is to attain a minimum of three eggs for a winter clutch size. Winter pause has been reduced in duration, and the percentage of birds exhibiting pause has fallen as low as 27 per cent. The percentage of broody birds and the degree of broodiness in broody birds have both gone to a low level. Persistency has improved so that the mean is not far below 365 days."

Lamoreux, Hutt, and Hall (8) said that: "The fact that mass selection was not effective in breeding for low egg production in this experiment does not mean, therefore, that the method is unsatisfactory when unrestricted by inherent limitations."

John Bird (10) reporting experiments of E. B. Parmenter, noted Massachusetts breeder, says: "In 1918, Goodale came out with his theory that, far from being a straight-line question of 'like begetting like,' a hen must inherit five separate and distinct characteristics in order to lay a lot of eggs. Here are the now famous five:

1. Early maturity—laying her first eggs at about 190 days and not later than 215.
2. High winter intensity—laying clutches of at least three eggs, one a day, before skipping.
3. Non-pause—no winter letup in production for eight days or longer, no neck-moult.
4. No broodiness in the pullet year.
5. High persistency—a laying year of 280 days or more."

PART I

ESTABLISHING A HIGH EGG PRODUCING STRAIN OF S. C. WHITE LEGHORNS

By H. Embleton

INTRODUCTION

It has been definitely established that a high egg yield is one of the major factors in producing eggs economically. Some breeders have been able to establish this character in relatively small groups. The general trend has been toward an increased egg production in the general poultry population. However, in no case has a breeder or a producer been able to say just what was responsible for this increase. The results seemed to have come about more or less haphazardly.

With the above situation in mind, work was started some years ago from which it was hoped that some definite principles could be established which if followed would consistently assure increased or continued heavy egg production.

Two approaches to this problem were used: one a selection of unrelated birds selected solely on their first year of egg production, which hereafter will be referred to as a foundation mating, and the other a selection of the best families of the foundation mating which will be referred to as the family mating.

The selections for the foundation mating in all cases involved a year's egg production which would be considered in a high range, from 240 eggs upward. This high production would be somewhat comparable to a selection by the five character system; namely, early sexual maturity, high rate of lay, non-winter pause, non-broodiness and persistency; for a fowl could not produce from 240 to 250 eggs a year without having the majority of the desired features of the five character system.

The selections for the family matings were made from the best families of the foundation progeny. This did not necessarily involve egg productions equal to that available for the foundation matings, for the progeny in most cases lacked the egg production of the parent stock.

Where complete year's egg production records were available these, of course, were used. With partial year's records the results were estimated with the use of the "365-Day Equivalent System" on a yearly basis. This system is explained in Part II.

Results from this work were measured by the following means: percentage of lay of progeny to mating; variation in egg range in progeny; average production of high family from progeny; and per cent of birds laying 200 eggs or more a year.

RESULTS FROM FOUNDATION MATINGS

Table 1, in which a comparison is made between the first two and last four years of work, shows a percentage increase in egg

TABLE 1.—COMPARISON OF FIRST TWO YEARS WITH THE LAST FOUR YEARS, FOUNDATION MATINGS

	Production Male's dam	Av. eggs Mating dams	Av. eggs Mating	Av. eggs Progeny	Egg range Progeny		Av. production, high family progeny	Per cent progeny above 200 eggs
1st two years	260	264	262	189	114-268		206	40
Last four years	275	269	272	240	202-286		254	89
			+4% increase	+27% increase	+77% increase	+7% increase	+23% increase	+122% increase

production of the matings of 4 per cent, evidently due to the increased egg production accumulative over the years even at the relatively high rate of production where increases became less as production increased.

The low range of egg production in the progeny was increased from 114 eggs to 202 eggs, representing a percentage increase of 77.

The high range which was 268 eggs for the first two years increased to 286 eggs for the last four years, an increase of 6.7 per cent.

The average egg production of the progeny increased from 189 to 240 eggs during this period, representing an increase of 27 per cent.

Using a production of 200 eggs or over as a dividing line between low and high production it was found that during the first two years of this work 40 per cent of the individuals exceeded the 200-egg limit, whereas during the last four years 89 per cent exceeded this limit.

DISCUSSION

There is no question but that the method of selecting foundation stock based on first year egg records has greatly increased egg production over a period of fifteen years.

RESULTS FROM FAMILY MATINGS

In Table 2, which is a comparison of results of the first two years of work with the last four years, the average egg production of the matings showed an increase of 3½ per cent. The average egg production of the progeny increased 12 per cent. The low range of egg production decreased 4 per cent, while the high range increased 5 per cent. The production of the high family increased from 186 eggs to 229 eggs, a percentage increase of 23. The percentage of individuals exceeding 200 eggs within a year decreased 27 per cent.

COMPARISON OF FOUNDATION AND FAMILY MATINGS

The percentage increase in egg production of the foundation matings of 4 per cent between the first two and the last four

TABLE 2.—COMPARISON OF FIRST TWO YEARS WITH LAST FOUR YEARS, FAMILY MATINGS

Mating Year Pen	Production Male's dam	Production Mating females	Av. eggs Mating	Av. eggs Progeny	Egg range Progeny	Av. production high family progeny	Per cent progeny above 200 eggs
Av. first two years	281	224	252	175	140-235	186	44
Av. last four years	271	252	261	196	135-248	229	32
				12% increase	—3.5% decrease	5.5% increase	23.1% increase	—27.3% decrease

years compares to 3.6 per cent for the family matings, this favoring the foundation matings.

The percentage increase in egg production in the progeny from foundation matings of 27 per cent, and an increase of 12 per cent in the progeny from the family matings definitely favors foundation matings.

The low range of egg production in the progeny increased 77 per cent from the foundation mating, compared to a decrease of 4 per cent in the progeny from the family matings.

The high range of egg production in the progeny of the foundation matings increased 7.0 per cent between the first two and the last four years of work, compared to an increase of 5.5 per cent for the progeny of the family matings.

The increase in average egg production for the high family for the same period was the same for the progeny of foundation and family matings, a 23 per cent increase. However, the average of 254 eggs for the foundation was much higher than the 229 eggs for the family matings.

The percentage of birds laying 200 eggs or over for twelve months between the first two and last four years increased 12.2 per cent from the foundation matings compared to a decrease of 27.3 per cent from the family matings.

Figure 1 shows the relationship between the egg production of the progeny to mating on a percentage basis for the various years this work was in progress. It is quite apparent that in each succeeding year of the foundation matings the production of the progeny more closely approached that of the mating; whereas, results from the progeny of the family matings decreased when compared to the matings.

About the same type of results appears in Figure 2 which shows the trend in the low egg range; that from the foundation matings increasing, while those from the family matings decreasing as the work progressed.

Figure 3 shows the trend in the high range of egg production. Here the results from the foundation and family matings somewhat parallel each other. However, the range from the founda-

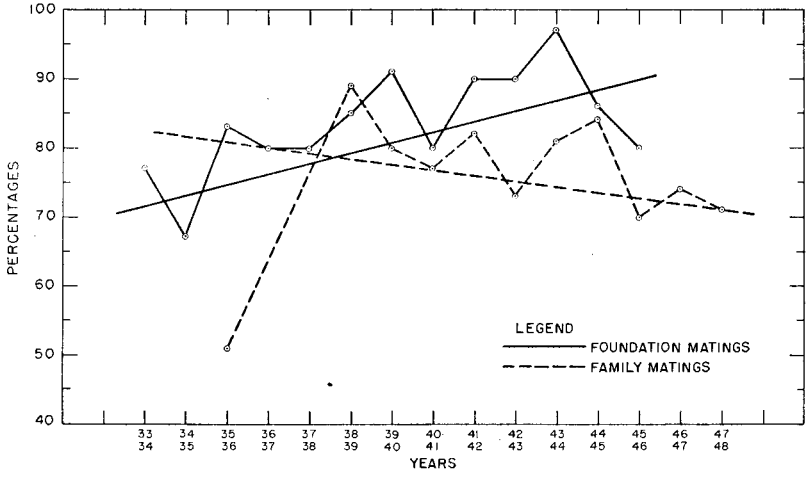

Figure 1.—Relationship between the egg production of progeny to matings, by percentages, for various years, for foundation and family matings.

tion matings was quite a little higher than from the family matings.

The relationship between the production of high families of progeny from foundation and family matings is presented in Figure 4. In this comparison, results from foundation and family matings were about in parallel. However, the families from foun-

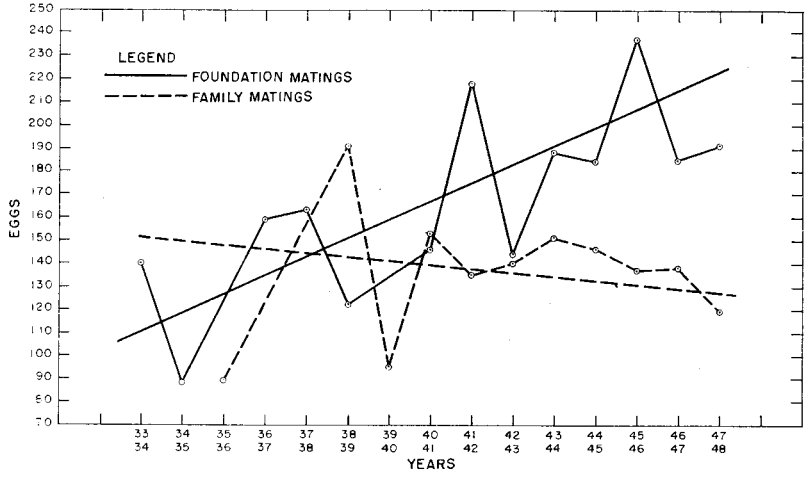

Figure 2.—Trend in low range of egg production, through various years, for foundation and family matings.

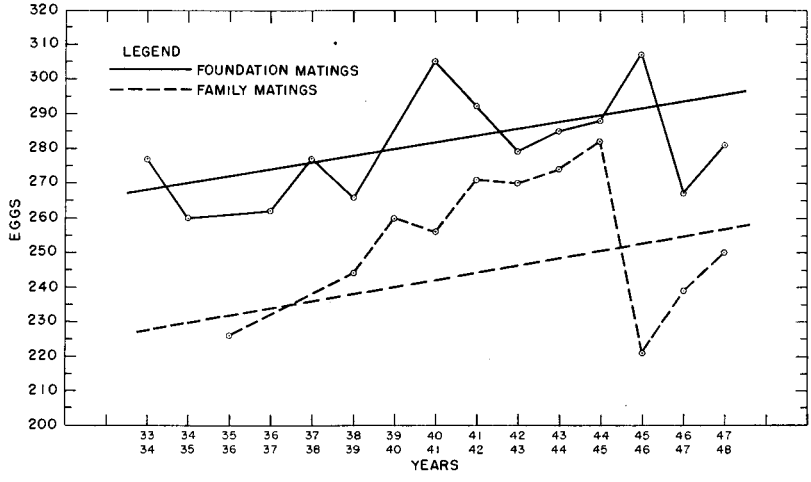

Figure 3.—Trend in high range of egg production, through various years, for foundation and family matings.

dation matings laid at a much higher rate than did those from the family matings.

A comparison showing the percentage of progeny laying 200 or more eggs during the twelve months' period for the various years of this work from foundation and family matings is set forth in Figure 5. From this it is apparent that the number of "200 eggers" increased from year to year from the foundation

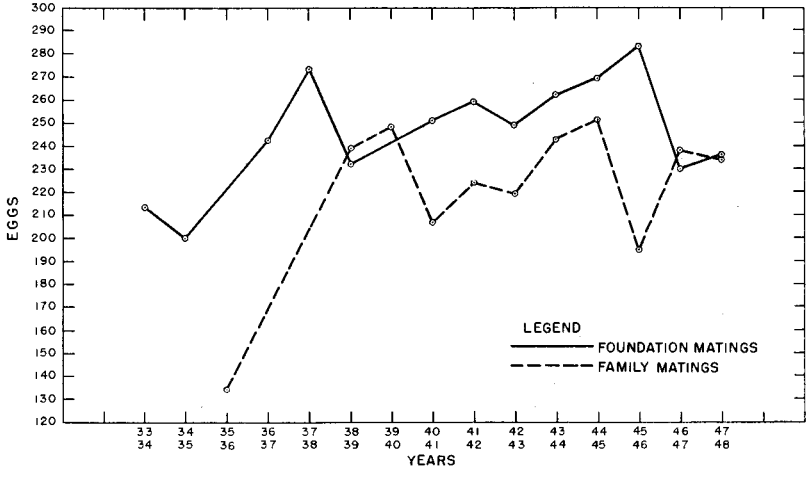

Figure 4.—Relationship between the average egg production of high-producing families from progeny, for various years, for foundation and family matings.

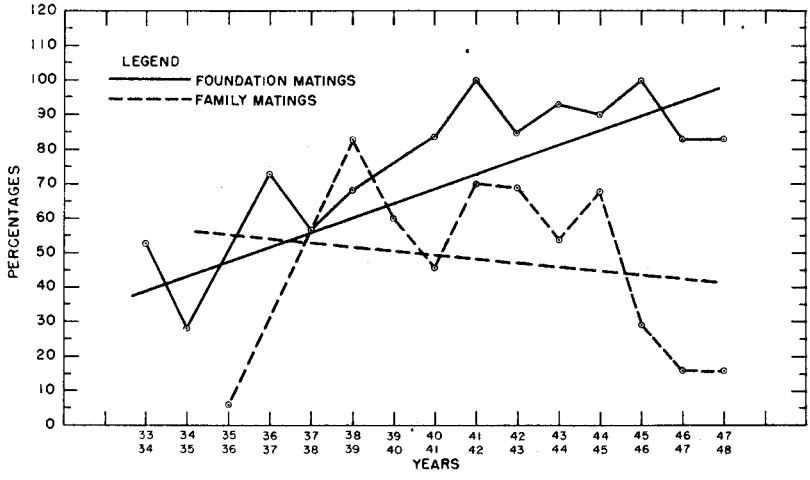

Figure 5.—Percentages of progeny laying 200 or more eggs, for various years, for foundation and family matings.

matings, while from the family matings they decreased, falling off very drastically the last three years.

CONCLUSIONS

Much better results were obtained by the progeny from foundation matings than from family matings in every phase which was used as a means of comparing values, namely: percentage inincrease in egg production of matings, percentage lay of progeny to mating; variation in egg range in progeny; average egg production of high families from progeny and per cent of birds laying 200 or more eggs in twelve months.

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PART II

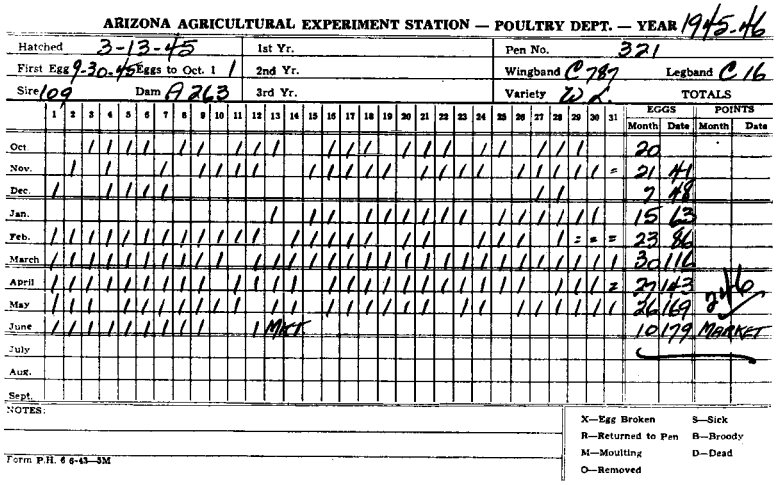
THE 365-DAY EGG PRODUCTION EQUIVALENT TABLE

INTRODUCTION

In experimental work all birds originally selected do not live the complete experimental period. This is a vexing and disappointing situation. If these birds that died could be passed from further consideration it would be an easy solution to the problem. In most cases this is impossible if a true analysis of results are to be obtained.

Some system, therefore, has to be used where results obtained by the fowls that live a partial period can be transposed in terms of the length of the experimental period, usually 365 days. The system known as the "hen day basis" has been used. This system assumes that a rate of lay from the beginning of the experimental period to the time of death would have been maintained throughout the entire experimental period had the bird lived the entire period. This is obviously not true due to the seasonal variation in production.

In an endeavor to devise a system to replace the "hen day basis" system that would be more accurate, a mortality table similar to that used in connection with life insurance suggested itself. In working out this table it was necessary to review several thousand first-year egg records in order to select a sufficient number that were normal. These records were grouped together in egg ranges of five eggs, and including yearly records from fifty to 325 eggs. In most egg range groups a population of at least seventy individual records were used to establish an average for the range group. The name "365-Day Egg Production Equivalent Table" has been given this system.



ARIZONA AGRICULTURAL EXPERIMENT STATION — POULTRY DEPT. — YEAR 1945-46

Hatched 3-13-45 | 1st Yr. | Pen No. 321

First Egg 9-30-45 Eggs to Oct. 1 1 | 2nd Yr. | Wingband C 787 | Legband C 16

Sire 109 | Dam A 263 | 3rd Yr. | Variety W. L.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTALS EGGS Month	EGGS Date	POINTS Month	POINTS Date
Oct.			1	1	1	1			1	1	1	1				1	1	1			1	1	1			1			1	1		20			
Nov.		1		1			1			1	1	1	1			1	1	1	1			1	1	1	1			1	1	1	=	21	41		
Dec.	1				1	1	1																				1	1				7	48		
Jan.													1		1	1		1	1	1	1	1	1		1	1	1	1	1	1		15	63		
Feb.	1	1	1	1	1	1	1	1	1	1	1			1	1	1	1	1			1	1			1	1	1		1	=	=	23	86		
March	1	1	1	1	1	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	30	116		
April	1	1	1	1	1	1	1	1	1		1	1	1	1		1	1	1	1	1	1	1	1	1	1	1			1	1	1	=	27	143		
May	1	1	1		1	1	1	1	1	1	1		1	1		1	1	1	1	1	1		1	1		1	1	1	1	1	1	26	169	8	9/10
June	1	1	1	1	1	1	1	1	1			1	MKT																			10	179	MARKET	
July																																			
Aug.																																			
Sept.																																			

NOTES:

X—Egg Broken S—Sick
R—Returned to Pen B—Broody
M—Moulting D—Dead
O—Removed

Form P.H. 6 6-43—3M

Figure 6.—Record of Hen C 16.

APPLICATION

Table 3 shows the 365-Day Egg Production Equivalent Table broken down to five-egg intervals.

The use of this table can best be illustrated by the concrete examples that follow.

EXAMPLE 1.—MARKETING BIRDS BEFORE THE END OF EXPERIMENTAL PERIOD

During the World War II period, with available monies remaining constant and with operational costs increasing rapidly, it became necessary to market a large group of birds on June 12. If the "365-Day Egg Production Equivalent Table" had not been available these records would have been a complete loss. With the use of this table, however, it was possible to estimate to within a close degree the potential egg-producing possibilities of these individuals based on a partial record.

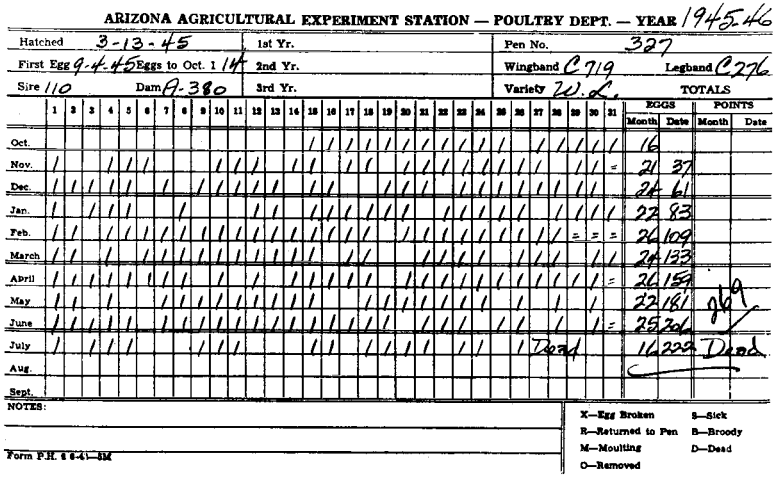
Referring to the record of Hen C 16, herewith reproduced, the last complete month of records was May, at the end of which time this bird had laid 169 eggs. Referring to the "Equivalent Table" and tracing down the column headed May, there is found a recording of 170 eggs, one more than actually laid for the period. Looking over the column headed September, the end of the twelve-month period, this bird's potential production was 247 eggs. Subtracting one egg, the difference between 169 and 170 eggs, its actual potential production was 246 eggs, and it was so recorded as a yearly record.

EXAMPLE 2.—BIRDS DYING BEFORE THE END OF THE YEAR

The record of Hen No. C 276 is herewith reproduced. This bird died on July 27 after having produced well for several months.

365 DAY EGG EQUIVALENT TABLE
(ADJUSTED TO A 5 EGG INTERVAL)

EGG RANGE	AVE. EGGS	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
50 - 54	52	2	3	10	15	23	29	36	40	45	49	50	52
55 - 59	57	2	4	11	17	25	32	39	44	49	53	54	57
60 - 64	62	2	4	12	18	27	35	43	47	53	58	59	62
65 - 69	67	2	4	12	19	29	38	46	51	58	63	64	67
70 - 74	72	2	4	12	20	30	39	48	55	62	67	69	72
75 - 79	77	3	7	12	21	31	40	49	57	64	70	74	77
80 - 84	82	3	7	13	22	32	41	51	60	68	75	79	82
85 - 89	87	3	8	13	23	33	44	54	64	73	79	84	87
90 - 94	92	3	8	14	24	34	46	58	68	77	84	89	92
95 - 99	97	3	8	15	25	35	49	61	71	81	88	94	97
101 - 104	102	3	8	16	26	37	50	64	75	84	92	98	102
105 - 109	107	4	8	17	27	39	53	67	79	88	97	103	107
110 - 114	112	4	9	17	28	41	55	70	83	92	101	108	112
115 - 119	117	4	9	18	29	43	58	73	86	97	106	113	117
120 - 124	122	4	9	19	31	44	60	75	90	101	110	118	122
125 - 129	127	4	11	20	31	45	62	77	92	102	112	121	127
130 - 134	132	4	11	21	32	47	64	79	95	105	117	125	132
135 - 139	137	4	12	22	33	49	66	82	99	110	121	130	137
140 - 144	142	4	12	22	34	51	69	85	102	114	126	130	142
145 - 149	147	4	13	23	36	52	71	86	106	118	130	140	147
150 - 154	152	6	16	26	38	53	72	90	105	120	133	143	152
155 - 159	157	6	16	27	40	55	75	92	108	124	138	148	157
160 - 164	162	6	17	28	41	57	77	95	112	128	142	153	162
165 - 169	167	6	17	29	42	59	79	98	115	132	146	158	167
170 - 174	172	6	18	30	43	61	82	101	119	136	151	162	172
175 - 179	177	11	21	34	50	65	84	103	122	137	151	164	177
180 - 184	182	12	22	35	51	67	87	106	125	141	155	168	182
185 - 189	187	12	23	36	52	69	89	109	129	144	159	173	187
190 - 194	192	12	23	37	54	71	91	112	132	148	163	178	192
195 - 199	197	12	24	37	55	73	94	115	135	152	168	182	197
200 - 204	202	15	28	44	60	79	100	118	137	155	172	188	202
205 - 209	207	15	29	45	62	81	102	121	141	159	176	192	207
210 - 214	212	16	30	46	64	83	104	124	144	163	180	197	212
215 - 219	217	16	31	47	65	85	107	127	148	167	184	202	217
220 - 224	222	17	31	48	67	86	109	130	151	171	189	206	222
225 - 229	227	17	34	53	73	92	114	135	156	175	193	211	227
230 - 234	232	17	35	55	75	94	117	138	160	179	197	215	232
235 - 239	237	17	36	56	77	97	119	141	163	183	201	220	237
240 - 244	242	17	37	57	78	99	122	144	167	187	205	225	242
245 - 249	247	18	37	58	80	101	124	147	170	191	210	229	247
250 - 254	252	20	40	61	83	104	127	149	172	193	213	233	252
255 - 259	257	20	41	62	85	106	129	152	175	197	217	237	257
260 - 264	262	21	42	63	86	108	132	155	179	200	221	242	262
265 - 269	267	21	42	65	88	110	134	158	182	204	225	247	267
270 - 274	272	22	43	66	90	112	137	161	185	208	230	251	272
275 - 279	277	22	44	67	91	113	139	164	189	211	234	256	277
280 - 284	282	23	44	68	93	115	142	167	192	215	239	260	282
285 - 289	287	23	45	69	94	117	144	170	196	219	243	265	287
290 - 294	292	23	46	70	96	119	147	172	199	223	247	269	292
295 - 299	297	24	47	71	97	121	149	175	202	226	251	274	297
300 - 304	302	24	47	72	98	123	150	176	203	228	253	277	302
305 - 309	307	24	48	73	100	125	152	179	206	232	257	282	307
310 - 314	312	24	49	74	101	127	155	182	210	236	261	287	312
315 - 319	317	25	49	75	103	129	157	185	213	240	265	291	317
320 - 324	322	25	50	76	104	131	160	188	216	244	270	296	322
325 - 329	327	26	50	78	106	132	162	191	220	247	274	299	327
330 - 334	332	26	50	79	108	134	165	194	223	250	279	304	332



ARIZONA AGRICULTURAL EXPERIMENT STATION — POULTRY DEPT. — YEAR 1945-46

Hatched 3-13-45 | 1st Yr. | Pen No. 327

First Egg 9-4-45 Eggs to Oct. 1 14 | 2nd Yr. | Wingband C 719 | Legband C 276

Sire 110 | Dam A-380 | 3rd Yr. | Variety W. L.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTALS EGGS Month	EGGS Date	POINTS Month	POINTS Date
Oct.																																16			
Nov.	/			/	/	/				/	/	/			/	/	/			/	/	/	/	/	/	/	/	/	/	/	=	21	37		
Dec.	/	/	/	/	/		/		/	/	/	/	/		/	/				/	/	/	/	/	/	/	/	/	/	/		24	61		
Jan.	/		/	/	/			/			/	/		/	/	/	/	/	/			/	/	/	/	/	/	/	/	/		27	83		
Feb.	/	/		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			/	/	/	/	/	/	/	=	=	=		26	109		
March	/	/		/	/	/	/	/	/	/	/	/	/	/	/	/	/			/	/	/	/	/	/	/	/	/	/	/		24	133		
April	/	/	/	/	/	/	/			/		/	/	/	/	/			/	/	/	/	/	/	/	/	/	/	/	/	=	26	159		
May	/	/		/		/	/	/	/	/	/	/	/	/				/	/	/	/	/	/	/		/		/		/		22	181	19	
June	/	/	/	/	/		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/		/		/	=	25	206		
July	/		/	/	/			/	/	/	/				/	/		/	/	/	/		/				Dead					16	222	Dead	
Aug.																																			
Sept.																																			

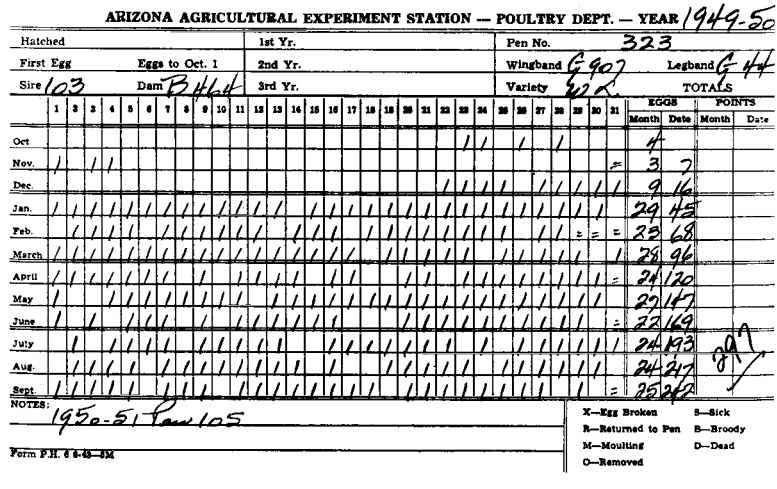
NOTES:

X—Egg Broken S—Sick
R—Returned to Pen B—Broody
M—Moulting D—Dead
O—Removed

Form P.H. 6 6-41—5M

Figure 7.—Record of Hen C 276.

Again applying the "365-Day Egg Equivalent Table," the month of June was the last completed monthly record. Up to that time this hen had laid 206 eggs. By referring to the "Equivalent Table" and glancing down the column headed June, the closest approximate record was 204 eggs. Following this over to the September column the potential record for the year was 267 eggs. Adding two eggs to this record, the difference between 204 and 206 eggs for June, the estimated 365-day record would be 269 eggs and it was so recorded.



ARIZONA AGRICULTURAL EXPERIMENT STATION — POULTRY DEPT. — YEAR 1949-50

Hatched | 1st Yr. | Pen No. 323

First Egg | Eggs to Oct. 1 | 2nd Yr. | Wingband G 907 | Legband G 44

Sire 103 | Dam B 464 | 3rd Yr. | Variety W. L.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTALS EGGS Month	EGGS Date	POINTS Month	POINTS Date
Oct																								/	/		/		/			4			
Nov.	/		/	/																											=	3	7		
Dec.																						/	/	/	/			/	/	/	/	9	16		
Jan.	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	29	45		
Feb.	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	=	=	=	23	68		
March	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	28	96		
April	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	=	24	120		
May	/	/		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/		29	147		
June	/	/		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	=	22	169		
July	/		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/		24	193	24	
Aug.		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/		24	217		
Sept.	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	=	25	242		

NOTES: 1950-51 Pen 105

X—Egg Broken S—Sick
R—Returned to Pen B—Broody
M—Moulting D—Dead
O—Removed

Form P.H. 6 6-49—5M

Figure 8.—Record of Hen G 44.

EXAMPLE 3.—APPLYING THE "365-DAY EGG EQUIVALENT TABLE" TO BIRDS COMING INTO LATE PRODUCTION

The fact that pullets come into production at a late period does not necessarily reflect upon their potential possibilities in connection with egg production. Most of this late production is due to environmental conditions coming about through mismanagement and the fact that an arbitrary twelve-month experimental period must of necessity be chosen, thereby shortening the period of lay for the late producers.

Referring to the record of G 44, herewith reproduced, it is found that the first complete month's record was January. Prior to that time sixteen eggs had been laid. At the end of September, 242 eggs had been recorded. Subtracting the sixteen eggs from the 242 eggs leaves 226 eggs laid from January first through September. Referring to the "Equivalent Table" it is found the egg range will be a difference of 226 eggs from January 1 through September. This exact difference was found in the egg range group from 295 to 299, and with a potential egg production possibility of 297 eggs; and the record was so recorded.

It is felt that to reasonably estimate a record with the "Equivalent Table" there should be a minimum of four months of continuous records upon which to base the estimate.

It has also been observed that the nearer normal an egg record the more exact is the estimate of the potential possibility.