2.8 ± 1.0 per cent of body weight per day (range, 1.6 to 4.6). While drinking this minimum water ration, the birds showed the same slight gain (0.1 per cent of initial body weight per day) as they did when their water supply was unrestricted.

After determining the minimum water requirements, ten normally hydrated Mourning Doves were deprived of drinking water altogether for a period of three days until mildly dehydrated (mean body weight 82.6 per cent of initial weight). Following this period of water deprivation, each bird was provided with an unlimited supply of distilled water in order to determine the initial drinking responses. Drinking was measured during the first minute after the dehydrated birds were provided with water and was found to average 10.8 ± 2.7 per cent of body weight (range, 7.6 to 15.6). The birds invariably drank this amount in one or two draughts. No attempt was made to determine rehydration rates of previously dehydrated birds, but Bartholomew and Dawson (Ecology, 35, 1954: 181–187) report that dehydrated Mourning Doves with a loss up to 15 per cent of their initial body weight made up this loss within minutes after water was made available.

At room temperature the minimum amount of drinking water required daily by Mourning Doves for maintenance of body weight is about 41 per cent of that amount typically drunk when water is unrestricted (2.8 vs. 6.9 per cent of body weight per day, respectively). Bartholomew and Dawson (*op. cit.*) found that Mourning Doves kept without drinking water for 24 hours at 39°C. lost an average of 11.6 per cent of their original body weight; they report that the *ad libitum* distilled water consumption at this same temperature is 23.9 per cent of body weight per day. Assuming that the loss in body weight during this relatively short period was due primarily to loss of body water, it would thus appear that even under moderate heat stress Mourning Doves typically drink at least twice as much water as is required for weight maintenance. These data suggest, therefore, that in the laboratory Mourning Doves regularly drink more water than is required and that one must undertake studies of minimum water requirements in order to assess the real water needs of these birds. The possibility remains, however, that the *ad libitum* water intake of captive birds may more nearly reflect the greater water demands of normally active, non-captive birds.

The mean weight loss of Mourning Doves on a dry diet without drinking water is 4.8 per cent of initial body weight per day (Bartholomew and MacMillen, 1960), while the minimum water ration required for maintenance of body weight averages 2.8 per cent of body weight per day. These data strongly suggest that the rate of weight loss of birds deprived of drinking water is due only partially to a loss of body water; the most obvious additional avenue of weight loss during periods of water deprivation is cessation of feeding. Such a response would be particularly uneconomical in terms of water balance for not only would the Mourning Doves have no drinking water, but they would also decrease their intake of carbohydrate-rich seeds and thereby decrease metabolic water production. Although no measurements of food intake have been made during water deprivation, it seems probable that Mourning Doves stop eating while deprived of water. This cessation of feeding would in part explain the inability of Mourning Doves to subsist on metabolic water alone as the relationship between the theoretical metabolic water production and respiratory water loss might suggest (Bartholomew and Dawson, Physiol. Zool., 26, 1953:162–166).

The ability of mildly dehydrated Mourning Doves to drink in one minute, and in one or two draughts, an amount of water equivalent to about 157 per cent of the daily *ad libitum* intake and about 386 per cent of the minimum daily requirement is consistent with field observations that Mourning Doves can satisfy their thirst in a single draught (Cowan, Calif. Fish and Game, 38, 1952:505–521). It would also appear from these data that Mourning Doves need to visit surface water only for a few minutes every day or so in order to maintain or regain a state of positive water balance.

Use of laboratory facilities and the helpful suggestions of Dr. G. A. Bartholomew are gratefully acknowledged.—RICHARD E. MACMILLEN, *Department of Zoology, Pomona College, Claremont, California, August 23, 1961.*

Additional Data on Food of California Quail in Eastern Washington.—In our earlier paper on food habits of the California Quail in eastern Washington (Condor, 62, 1960:473–477) part of the tabular material involving the more commonly represented plant foods was omitted by oversight. Accordingly we present herewith the data that supplement those of tables 1 and 2 of the earlier paper.

TABLE 1

ANALYSIS OF CROP CONTENTS FROM 291 CALIFORNIA QUAIL

Food items	Spring	Summer	Fall	Winter
Plant foods	Percentage total volume	Percentage total volume	Percentage total volume	Percentage total volume
Triticum aestivum	34.21	24.36	19.09	33.82
Green plant material	32.23	6.08	3.41	7.33
Pisum sativum	.....	24.36	1.02	.....
Salsola kali	1.90	.....	15.95	1.38
Amsinckia sp.	.....	19.06	.....	.....
Helianthus annuus	0.11	.....	15.23	Trace
Amaranthus graecizans	.....	13.81	Trace	Trace
Dipsacus sylvestris	1.74	.....	3.13	8.91
Melilotus alba	2.36	.....	1.56	9.59
Robinia pseudoacacia	3.42	0.27	.....	6.31
Chenopodium sp.	8.00	.....	0.47	1.22
Sisymbrium altissimum	3.12	.....	0.28	6.09
Amaranthus retroflexus	2.66	.....	1.06	2.55
Setaria viridus	0.91	.....	4.30	Trace
Hordeum sp.	.....	.....	3.28	0.44
Medicago sativa	Trace	.....	3.47	0.12
Iva xanthifolia	.....	.....	0.16	3.22
Euphorbia glyptosperma	2.97	.....	0.31	.....
Cerastium sp.	.....	2.76	.....	.....
Polygonum sp.	0.19	.....	2.53	Trace
Lactuca scariola	0.15	0.27	2.12	0.16

TABLE 2

ANALYSIS OF GIZZARD CONTENTS FROM 89 CALIFORNIA QUAIL

Food items	Spring	Summer	Fall	Winter
Plant foods	Percentage total volume	Percentage total volume	Percentage total volume	Percentage total volume
Robinia pseudoacacia	0.62	3.66	.....	10.84
Polygonum aviculare	.....	.....	1.20	10.35
Triticum aestivum	.....	6.10	0.71	2.46
Helianthus annuus	1.23	.....	4.96	.....
Eleocharis macrostachya	6.17	.....	.....	.....
Melilotus alba	.....	.....	2.40	3.45
Green plant material	.....	1.83	2.78	0.99
Setaria viridis	.....	.....	4.69	.....
Medicago sativa	.....	.....	0.88	2.95
Amaranthus graecizans	.....	1.22	2.34	.....
Trifolium sp.	.....	1.83	Trace	0.49
Caragana arborescens	.....	.....	2.18	.....
Rosa sp.	.....	.....	0.16	1.97
Dipsacus sylvestris	.....	.....	1.91	.....
Bromus tectorum	.....	.....	0.82	0.99
Rhus glabra	.....	.....	1.80	.....
Carex sp.	.....	.....	1.42	.....
Lotus sp.	.....	.....	1.31	.....
Salsola kali	.....	.....	0.77	0.49
Potentilla anserina	1.23	.....	.....	.....
Polygonum persicaria	.....	1.22	Trace	.....

—CHARLES G. CRISPENS, JR., IRVEN O. BUSS, and CHARLES F. YOCOM, *Department of Zoology, Washington State University, Pullman, Washington, December 27, 1961.*