heavier, it passes down through the sample and extracts the substance. The solvent reaches the side ramification level, goes into the apparatus, and may then be siphoned over to the flask.

This method can be used for several purposes: for extraction of substances from liquid samples; for volatile substances or solvents; for solvents lighter than the samples; for solvents heavier than the samples; for partial extractions (the flask with solvents must be changed during the extraction). The method is being used for extraction of organic acids in feces, in research assisted by financial grants from the São Paulo Jockey Club.

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Reingestion in the Hare *Lepus europaeus* Pal.

The domestic rabbit produces special small soft fecal pellets that it takes directly from the anus and swallows whole (*1–4*). In this way, a large part of the food passes twice through the alimentary tract. This behavior, which has been termed *refection* (*2*) or, more appropriately *reingestion* (*5*), also occurs in the wild species (*Oryctolagus cuniculus*) (*6*) and is an important daytime activity of the animal (*5*). The question arises as to how far it is a feature of the biology of lagomorphs generally. A casual observation on a pet hare recorded as long ago as 1895 (*7*) suggested that reingestion also occurred in this species. It was therefore decided to collect wild hares (*Lepus europaeus*) at known times of the day and to examine the contents of the stomach and rectum for evidence of this behavior. Altogether 66 hares were examined from various localities in New Zealand.

Table 1. Incidence of reingestion in *Lepus europaeus*.

Time of day	No. examined	No. with soft feces
2 A.M.	7	0
4 A.M.	2	0
6 A.M.	2	0
8 A.M.	5	2
10 A.M.	5	5
12 Noon	1	1
2 P.M.	0	
4 P.M.	7	2
6 P.M.	8	0
8 P.M.	3	0
10 P.M.	23	0
Midnight	3	0
Total	66	10

The recta of several of these animals contained soft amorphous feces, and apparently identical material was present in the cardiac ends of their stomachs. The fecal origin of this material in the stomach was confirmed by the presence of comparable numbers of oöcysts of intestinal coccidia in both the feces and stomach contents of several of the animals. Table 1 groups all the animals examined into 2-hr periods throughout the day according to the time of death. It can be seen that the amorphous feces were found only in hares killed between 6 A.M. and 4 P.M. and that they were found in the recta of all animals killed between 8 A.M. and 12 noon. This corresponds almost exactly to the time when reingestion takes place in the rabbit (*5*) and shows that the hare has a similar well-defined diel rhythm.

It now seems likely that reingestion will be found as a normal feature of lagomorph biology. So far only two European species *O. cuniculus* and *L. europaeus* have been studied, and no information has been recorded on this aspect of the biology of any of the many American species. Reingestion could easily be overlooked, particularly if the soft feces are semiliquid, as in the European hare, since then they might be taken as an indication of some intestinal disorder; however, the regularity in the time of their appearance should disclose their real nature.

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References

1. H. Madsen, *Nature* **143**, 981 (1939).
2. A. Eden, *ibid.* **145**, 36 (1940).
3. E. L. Taylor, *Proc. Zool. Soc. Lond.* **110**, 159 (1940).
4. H. M. Olsen and H. Madsen, *Vidensk. Medd.* **107**, 37 (1944).
5. J. S. Watson, *Proc. Zool. Soc. Lond.*, in press.
6. H. N. Southern, *Nature* **149**, 553 (1942).
7. R. Drane, *Trans. Cardiff Naturalists Soc.* **27**, 101 (1895).

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Science does not know its debt to imagination.—R. W. EMERSON.