



VETERINARY POISONS
INFORMATION SERVICE



Annual Report | 2015

Veterinary Poisons Information Service

The VPIS is a 24-hour staffed telephone emergency service for veterinary professionals and those working for animal welfare, providing information on the management of actual and suspected acute poisoning in animals.

Our objective is to ensure accurate information and advice is provided as soon as possible after exposure or presentation; advice should be sought at the earliest opportunity to ensure the most appropriate management. Advice for every animal is tailored to the specific case in question including risk assessment, information on

anticipated clinical effects, suggested treatment protocol and prognostic advice; we aim to ensure the animal receives optimum treatment.

The VPIS continues to publish regularly including review articles and analyses of our cases. We also provide education for veterinary professionals on the latest information through Continuing Professional Development (CPD) days that are available as a rolling programme of events around the United Kingdom (see www.vpisglobal.com).

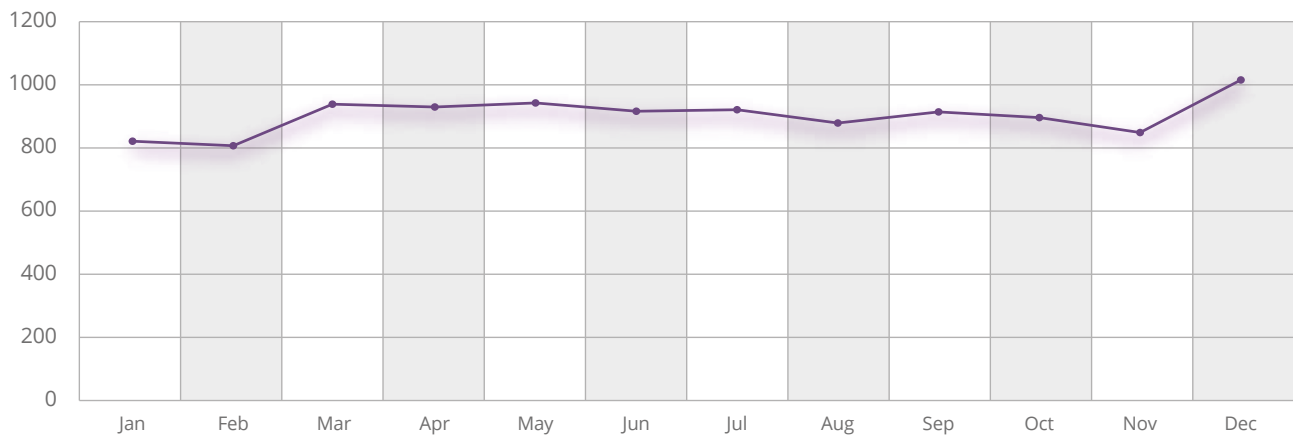
Enquiry load

In 2015 the VPIS received 10,893 enquiries (including 16 cases reported retrospectively via the online reporting tool), compared to 10,896 in 2014.

Monthly enquiry load

The number of enquiries were lowest in January and February, steady throughout the rest of the year and peaked in December.

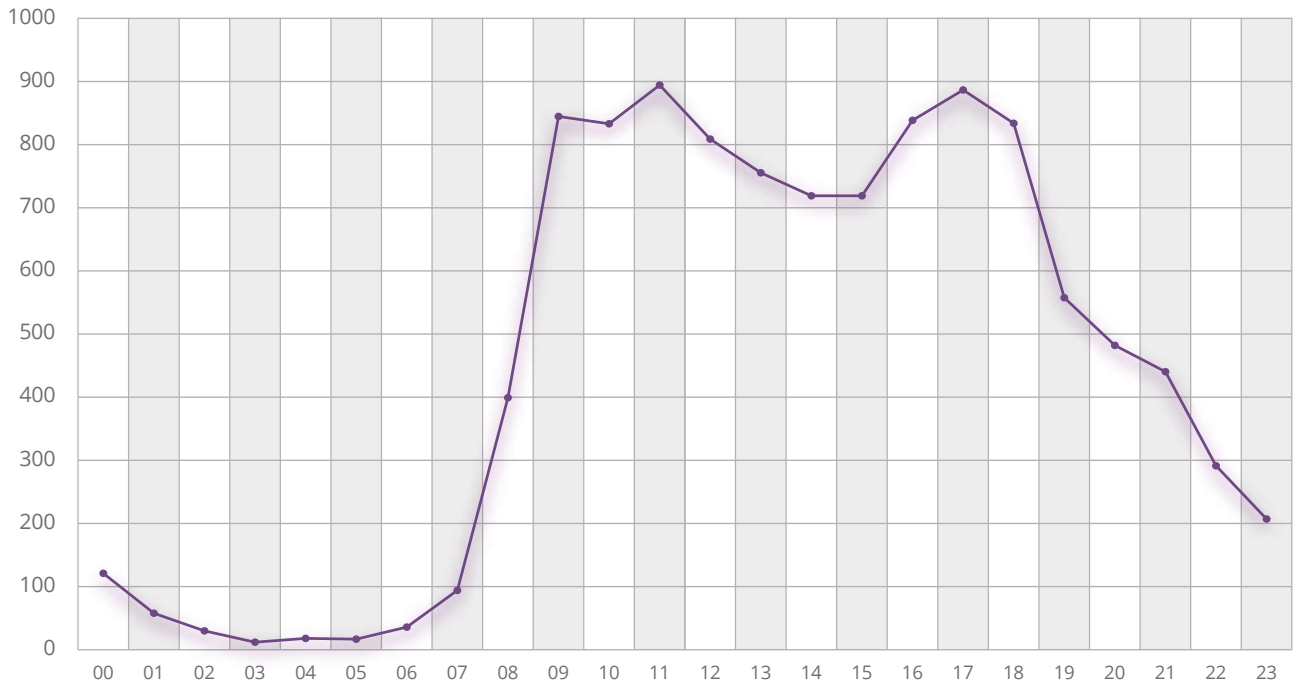
Figure 1. VPIS enquiries received by month



Enquiries by time of day

Enquiry numbers were low overnight and were most frequent during surgery hours, before declining over the evening.

Figure 2. The distribution of telephone enquiries by time of day



Enquiries by animal type

The VPIS will answer an enquiry about any animal. In 2015 we received enquiries about 14 different animal types, but dogs predominated (84%) followed by cats (14%).

Figure 3. The percentage of enquiries by animal type

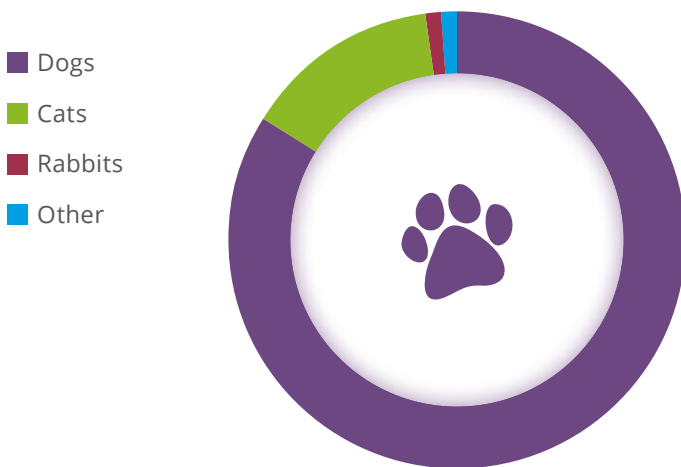


Table 1. The number of enquiries by animal type

Animal	Total	Percentage
Dog	9148	84%
Cat	1513	14%
Rabbit	108	1%
Equine	42	<1%
Rodent	19	<1%
Bird	14	<1%
Cattle	9	<1%
Ferret	8	<1%
Goat	7	<1%
Sheep	4	<1%
Reptile	3	<1%
Human*	2	<1%
Skunk	2	<1%
Pig	1	<1%
Fish	1	<1%

* These generally related to accidental exposure in veterinary staff.

Enquiries by agent

The 10,893 enquiries received in 2015 cases involved 14,647 agents. The agents were similar to those in previous years, except that enquiries relating to electronic cigarettes increased again (91 in 2015, 64 in 2014 and 17 in 2013). There was a dramatic decline in the number of cases involving palm oil (8 enquiries compared to 57 enquiries in 2014 following severe weather in the winter of 2013-2014).

***Important note:** The following five tables (Tables 2-6) and Figure 4 show a list of the agents, not products, which we are most frequently contacted about. The frequency of enquiry may not necessarily reflect an agent's toxicity but can sometimes be a feature of ready availability and ease of access. Also, an agent may rank highly because it is present in a product containing multiple agents which may vary in toxicity.

Table 2*. Total enquiries received by agent group

Agent group	Total	Percentage of total enquiries (n=10893)	Agent group	Total	Percentage of total enquiries (n=10893)		
Drugs	Total	6139	56.4%	Plants	Total	2096	19.2%
	Ibuprofen	462			<i>Vitis vinifera</i> (grapes, sultanas, raisins, currants)	345	
	Paracetamol	352			<i>Lilium</i> species	142	
	Naproxen	128			<i>Allium cepa</i> (onion)	86	
	Meloxicam	124			<i>Narcissus</i> species (daffodil)	63	
	Oral contraceptive	110			Unidentified plant	37	
					<i>Allium sativum</i> (garlic)	37	
					<i>Tulipa</i> species	36	
Household products	Total	1447	13.3%	Animals	Total	193	1.8%
	Fertiliser	221			Adder	101	
	Battery	118			<i>Hymenoptera</i> (bees, wasps)	7	
	Electronic cigarette	91		Cosmetics and toiletries	Total	185	1.7%
	Disinfectant	60			Soap (solid)	25	
	Fabric washing liquid capsule	59			Hair colourant	21	
					Nappy	16	
					Nail glue	10	
Pesticides	Total	1615	14.8%	Fungi	Total	165	1.5%
	Difenacoum	382			Fungi	102	
	Bromadiolone	330			Tremorgenic mycotoxins	54	
	Imidacloprid	81		Misc.	Palm oil	8	
	Glyphosate	80					
	Permethrin	67					
	Rodenticide not known	62					
	Brodifacoum	52					
Food	Total	1091	10.0%				
	Chocolate	584					
	Xylitol/E967	152					
	Chocolate	149					
	Chewing gum/ bubble gum	146					

Most common agents

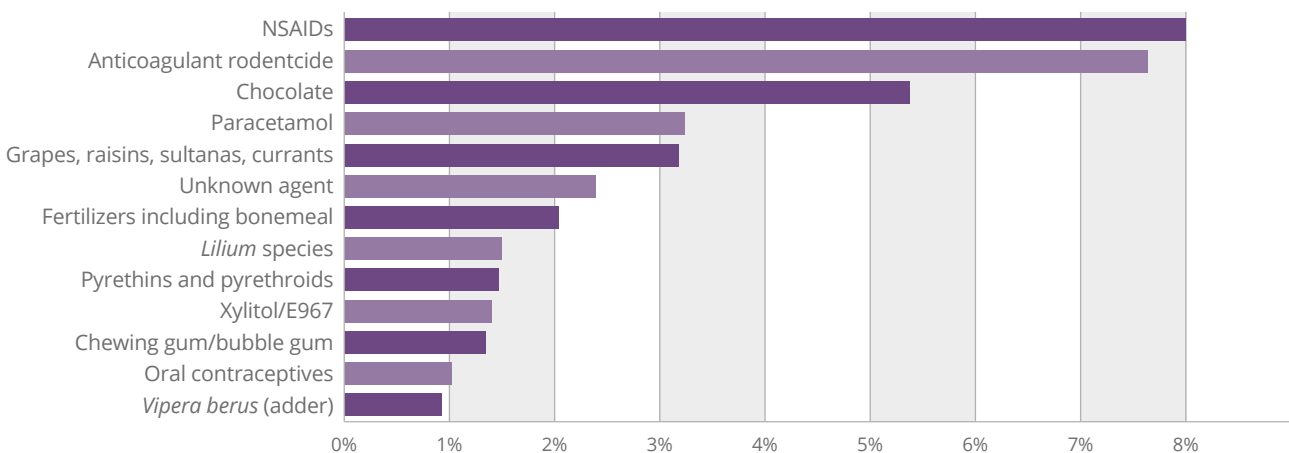
The most common agents the VPIS are contacted about are non-steroidal anti-inflammatory drugs (NSAIDs), anticoagulant rodenticides and chocolate. This is unchanged from previous years. Ibuprofen remained the single most common agent.



Table 3*. The most common agents overall

Agent name	Total	Percentage of total enquiries (n=10893)
Ibuprofen	462	4.2%
Difenacoum	382	3.5%
Paracetamol	352	3.2%
<i>Vitis vinifera</i> (grapes, sultanas, raisins, currants)	345	3.2%
Bromadiolone	330	3.0%
Milk chocolate	291	2.7%
Unknown agent	260	2.4%
Xylitol/E967	152	1.4%
Chocolate	149	1.4%
Chewing gum/bubble gum	146	1.3%

Figure 4*. The most common agents as a percentage of the annual total



The most common enquiries in dogs

In dogs ibuprofen remains the top single agent (as in previous years), but dark and milk chocolate enquiries comprised 5.9% of all canine enquiries (compared to 6.3% in 2014) and the anticoagulant rodenticides, bromadiolone and difenacoum, 7.0% (the same as in 2014).

Table 4*. The most common enquiries in dogs

Agent name	Total	Percentage of canine enquiries (n=9148)
Ibuprofen	446	4.9%
Difenacoum	351	3.8%
Paracetamol	313	3.4%
<i>Vitis vinifera</i> (grapes, sultanas, raisins, currants)	298	3.3%
Bromadiolone	288	3.1%
Milk chocolate	274	3.0%
Unknown	196	2.1%
Xylitol/E967	149	1.6%
Chewing gum/bubble gum	146	1.6%
Chocolate	137	1.5%
Dark chocolate	130	1.4%
Naproxen	124	1.4%
Oral contraceptives	107	1.2%

The most common enquiries in rabbits.

In rabbits bromadiolone was the most common enquiry in 2015 (as it was in 2014).

Table 6*. The most common enquiries in rabbits

Agent name	Total	Percentage of total enquiries
Bromadiolone	9	8.3%
<i>Spathiphyllum</i> species (peace lily)	6	5.6%
Milk chocolate	6	5.6%
Difenacoum	6	5.6%
Rodenticide not known	4	3.7%

The most common enquiries in cats.

Lilium species (lily) remains the most common agent in cats (6.9% compared to 5.6% in 2014), closely followed by cases where the agent was unknown (3.5% compared to 5.0% in 2014), but poisoning was suspected.

Table 5*. The most common enquiries in cats

Agent name	Total	Percentage of feline enquiries (n=1513)
<i>Lilium</i> species	105	6.9%
Unknown agent	53	3.5%
<i>Vitis vinifera</i> (grapes, sultanas, raisins, currants)	46	3.0%
Benzalkonium chloride	44	2.9%
Ethylene glycol	43	2.8%
Permethrin	38	2.5%
Disinfectant	38	2.5%
Imidacloprid	37	2.4%
Paracetamol	36	2.4%
Moxidectin	28	1.9%
Praziquantel	28	1.9%



Follow up data of enquiries

There are no national statistics on the cause of death for companion animals and we are not informed about all deaths in animals related to poisoning in the UK. We are also not informed about the outcome of all cases we are consulted about.

We send out postal follow up questionnaires to collect data on the clinical course, treatments given and outcome of a proportion of cases we are consulted about. In 2015, 3,361 follow ups were sent (31% of cases). Follow up and outcome data were available for 1,502 cases (44.7% of follow ups sent) in 2015.

In over half the cases where follow up information was received the animal made a full recovery and a quarter of the animals remained asymptomatic. A fatal outcome was recorded in 6.1% of cases (4.1% euthanized and 2.0% died). Note that in some cases euthanasia may be an outcome due to financial constraints on the owner and not solely due to toxicity, although a poor prognosis and significant adverse effects are likely to influence such a course.



Table 7. The outcome in cases with returned follow up

Outcome	Total	Percentage (n=1502)
Full recovery	841	56.0%
Fine throughout	370	24.6%
Euthanized	62	4.1%
Unrelated to exposure	34	2.6%
Not known	34	2.6%
Died	31	2.1%
Full recovery (query related)	25	1.7%
Euthanized (unrelated)	20	1.3%
Did not present	18	1.2%
Euthanized - query related	12	<1%
Not known (referred)	13	<1%
Ongoing	13	<1%
Improving but ongoing	12	<1%
Not applicable	10	<1%
Died (query related)	3	<1%
Died (unrelated)	2	<1%
Query related	2	<1%
Grand Total	1502	-



Rabbit Photo by Mathias Appel - Flickr

Cases with known outcome

Cases with a fatal outcome – dogs

In dogs there was a fatal outcome in 53 cases (which were thought to be due to poisoning). Of these 25 dogs died and 28 were euthanized. Poisoning with an unknown agent was suspected as the most common cause of a fatal outcome, followed by *Vipera berus* (adder) bite. Dermatological creams for humans were involved in four cases (calcipotriol, calcitriol, fluorouracil). There were three fatal cases involving anticoagulant rodenticides (bromadiolone and/or brodifacoum), three involving molluscicides (metaldehyde and unknown) and two fatal cases involving 'legal highs'.

Table 8. Canine cases with a returned follow up and a fatal outcome

Agent	Died	Euthanized	Agent	Died	Euthanized
Unknown agent	7	6	Caffeine		1
<i>Vipera berus</i> (adder)	2	3	Ivermectin and praziquantel		1
Bromadiolone	2		Moxidectin and praziquantel		1
Baclofen		2	Milbemycin and praziquantel	1	
Legal high		1	Fipronil	1	
Legal high and 3,4-methylenedioxy-methamphetamine (MDMA, ecstasy)		1	Chlormequat	1	
Ethylene glycol	1	2	Sodium chloride (homemade dough)	1	
Monensin	1	1	Sodium hydroxide		1
Molluscicide not known	1	1	5-Hydroxytryptophan (5-HTP)	1	
Fluorouracil		2	<i>Allium cepa</i> (onion) and <i>Allium sativum</i> (garlic)	1	
Calcipotriol		1	Ferrous sulphate, mecoprop and MCPA (moss and weed killer)	1	
Calcipotriol and calcitriol		1	Paracetamol		1
Bromadiolone and brodifacoum	1		<i>Sambucus</i> species (elder), <i>Euonymus</i> species and <i>Buxus microphylla</i>		1
Tremorgenic mycotoxins		1	Total	25	28
Metaldehyde	1				
<i>Cannabis sativa</i>	1				
Chocolate	1				

Cases with a fatal outcome – cats

In cats there was a fatal outcome in 37 cases (which were thought to be due to poisoning). Of these 5 cats died and 32 were euthanized. The most common agent involved in these cases was ethylene glycol which accounted for 70% of fatalities. Note that in veterinary toxicology ethylene glycol exposure is rarely confirmed with laboratory analysis. Other common agents in fatal feline cases were permethrin and unknown.

Table 9. Feline cases with a returned follow up and a fatal outcome

Agent	Died	Euthanized
Ethylene glycol	1	25
Unknown agent		2
Permethrin	1	1
Milbemycin and praziquantel	2	
<i>Lilium</i> species		1
Benzalkonium chloride		1
Moxidectin	1	
Nitroscanate		1
Creosote		1
Total	5	32

Table 10. Other cases with a returned follow up and a fatal outcome

Animal	Agent	Died	Euthanized
Equine	Botulism		1
Rabbit	<i>Hedera helix</i> (ivy)		1
Rabbit	Fipronil	1	
Cattle	Silage contaminated with lead battery	Multiple deaths	



Education, outreach and collaborations

We ran nine Continuing Professional Development (CPD) events over the year in London, Birmingham, Edinburgh, Exeter, Bristol, Cambridge and Manchester. We also lectured at the University of Cambridge, the Royal Veterinary College (RVC), the Vet Trust and the 2015 Annual Vet Trust Conference in Stirling.

We produced four editions of the newsletter Toxic Times and 12 monthly electronic newsletters. We also produced 26 leaflets on poisoning in pets for owners, half of which covered general themes and half were agent specific. These were made available on our website.

We exhibited at the British Small Animal Veterinary Association (BSAVA) Congress in Birmingham, 9-12 April and the London Vet Show, 19-20 November.

We attended and submitted 9 posters to the 35th International Congress of the European Association of Poisons Centres and Clinical Toxicologists (EAPCCT) 26-29 May 2015, Malta. We had an oral presentation at the 13th International Congress of the European Association of Veterinary Pharmacology and Toxicology (EAVPT), Nantes, France, 19-22 July. We presented at the International Cat Care Annual Conference in Birmingham on 24 October on cat poisonings as part of the Keeping Your Cat Safe campaign.

We worked in collaboration with International Cat Care, the Royal Botanic Gardens, Kew, the Fungus Conservation Trust, the Royal Society for the Protection of Animals (RSPCA), the People's Dispensary for Sick Animals (PDSA) and the Kennel Club.



Publications from the VPIS in 2015

- Bates N, Edwards N. 2015 Toxic deaths in cats and dogs reported to the Veterinary Poisons Information Service (VPIS) [abstract]. *Clin Toxicol* 53(4):273.
- De Sousa AA, Matumo S, Edwards N. 2015 Liquid detergent capsule exposure in cats and dogs [abstract]. *Clin Toxicol* 53(4):273-4.
- Rawson-Harris P, Bates N, Edwards N. 2015 Lipid infusion: An analysis of cases reported to the Veterinary Poisons Information Service (VPIS) [abstract]. *Clin Toxicol* 53(4):274-5.
- Bates N, Ellison J, Edwards N. 2015 Palm oil ingestion in dogs [abstract]. *Clin Toxicol* 53(4):275.
- Bates N, Rawson-Harris P, Edwards N. 2015 Canine exposure to jellyfish [abstract]. *Clin Toxicol* 53(4):275.
- Rawson-Harris P, Bates N, Edwards N. 2015 Diclofenac ingestion in dogs: What are the risk factors associated with clinical signs? [abstract]. *Clin Toxicol* 53(4):275-6.
- Bates N, Crouchley J, Edwards N. 2015 Electronic cigarette ingestion in dogs [abstract]. *Clin Toxicol* 53(4):276.
- Bates N, Edwards N. 2015 Nitroxynil causes severe hyperthermia in dogs [abstract]. *Clin Toxicol* 53(4):276-7.
- Bates N, Edwards N. 2015 Adder antivenom: The experience and opinions of veterinary professionals in the UK [abstract]. *Clin Toxicol* 53(4):277.
- Ellison J. 2015 NSAID overdose in dogs. *Vet Pract Today* 3(1):28-29.
- Bates N, Rawson-Harris P, Edwards N. 2015 Common questions in veterinary toxicology. *J Sm Anim Pract* 56(5):298-306.
- Bates N, Edwards N. 2015 Benzalkonium chloride exposure in cats: a retrospective analysis of 245 cases reported to the Veterinary Poisons Information Service (VPIS). *Vet Rec* 176:229.
- Ellison J. 2015 Full of the joys of spring. *Pet Focus Spring* pp18-19.
- Ellison J. 2015 Anticoagulant rodenticides. *Vet Pract Today* 3(2):30-31.
- Ellison J. 2015 Intravenous lipid infusion. *Vet Pract Today* 3(3):33-35.
- Ellison J. 2015 Sun, sea and toxicity. *Pet Focus Summer* pp18-19.
- Bates N, Edwards N. 2015 Use of intravenous lipid emulsion in poison cases. *Vet Times* 45(23):19-20.
- Bates N. 2015 Benzalkonium chloride exposure in cats. *Feline Focus* 1 (7):261-265.
- Edwards JN, Bates N. 2015 New trends in poisoning treatment – lipidotherapy [abstract]. *J Vet Pharmacol Ther* 38 (Suppl 1):65.
- Ellison J. 2015 Paracetamol toxicity in cats. *Vet Pract Today* 3(4):23-25.
- Bates N. 2015 General approach to the poisoned patient. *Companion Animal* 20(8):465-469.
- Bates N. 2015 Chocolate toxicity. *Companion Anim* 20(10):579-581.
- Bates N. 2015 Lily toxicity in cats. *Feline Focus* 1(9):329-333.
- Ellison J. 2015 Dangers of detergents. *Vet Pract Today* 3(5):22-24.
- Ellison J. 2015 Autumnal toxins. *Pet Focus Autumn* pp18-19.
- Bates N. 2015 Effects of exposure to human medicines in cats and dogs. *Vet Nurse* 6(8):482-487.
- Bates N. 2015 Grape toxicosis in companion animals. *Companion Anim* 20(12):668-673.
- Bates N. 2015 Ethylene glycol poisoning. *Feline Focus* 1(11):401-407.
- Ellison J. 2015 Electronic cigarettes, nicotine and nicotine patches. *Vet Pract Today* 3(6):21-22.
- Ellison J. 2015 Festive temptations. *Pet Focus Winter* pp14-15.

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