

*Sabatieria kelletti* sp. nov.

(Figs 1–3)

**MATERIAL STUDIED.** Holotype: ♂1 BM(NH) 1982.5.26. Allotype: ♀1 BM(NH) 1982.5.32. Paratypes: five males BM(NH) 1982.5.27–31; five juveniles BM(NH) 1982.5.33–37.

**LOCALITY.** 15 m depth, Back Bay, Stonington Island, Antarctica. Lat. 68°12·4' S, long. 66°59·5' W.

**MEASUREMENTS** (Table 1)

Holotype ♂: —  $\frac{350 \quad 2845}{19 \quad 74 \quad 87 \quad 61}$  3095  $\mu\text{m}$ ; a=36; b=8·8; c=12·4; S=63  $\mu\text{m}$

Allotype ♀: —  $\frac{330 \quad 1550 \quad 3035}{21 \quad 74 \quad 95 \quad 52}$  3295  $\mu\text{m}$ ; a=35; b=10·0; c=12·7; V=47%

**DESCRIPTION.** The body narrows suddenly in the region just posterior to the amphid: h.d. 26–33% of the posterior oesophagus c.d. Cuticle punctated: in the lateral field the dots are larger and more irregularly arranged than medially, especially in the oesophagus and tail regions (Fig. 3c, e). The medial dots are more or less arranged in transverse rows (Fig. 3d). In the cylindrical portion of the tail the dots are present but are only very tiny. Somatic setae in four longitudinal files, one on each side of the lateral field: 5–7  $\mu\text{m}$  long and spaced 50–130  $\mu\text{m}$  apart but closer together at the ends than in the middle of the body. In adults there is a subventral row of three more closely spaced cervical setae (Figs 1c, d & 3a). In stage-4 juveniles (J1–4) there are only two setae in this position (Fig. 1i) and no such setae were observed in what is probably a stage-2 juvenile (J5). There are additional 7–10  $\mu\text{m}$  dorsal and ventral caudal setae in the males (Figs 1f, j & 2f). The tail tip has three terminal setae, one dorsal and two subventral. R1 sensilla papilliform. R2 sensilla short but clearly setiform. R3 sensilla in adults 42–47% h.d.: the same relative length in juveniles. Amphids

describe  $2\frac{1}{2}$  to almost 3 turns; 60–70% c.d. in males; 40% c.d. in female; 45–60% in juveniles. Anterior part of buccal cavity cup-shaped, posterior part not expanded. Oesophagus widens in posterior 20% but is not set-off (Fig. 3b). Nerve ring at 52–54% of oesophagus length. Excretory pore at 61–67% of oesophagus length with a conspicuous ampulla (Fig. 3b). Tail conico-cylindrical; cylindrical part 50–60% of total with a distinct but not greatly swollen tip; 3·6–4·3 a.b.d. in males, 5·0 a.b.d. in females.

**Table 1** Measurements of *Sabatieria kelletii* ( $\mu\text{m}$ )

Character	$\sigma_1$	$\sigma_2$	$\sigma_3$	$\sigma_4$	$\sigma_5$	$\sigma_6$	Mean	CV%	$\varphi$	J1	J2	J3	J4	J5
Total body length	3095	2700	2620	3020	2525	2775	2789	8.1	3295	2345	2270	2265	2210	1600
Demanian ratio a	36	40	31	39	37	36	37	8.6	35	38	34	36	33	36
Demanian ratio b	8.8	9.2	9.0	10.2	9.0	9.9	9.4	6.0	10.0	7.9	8.4	9.1	9.0	6.8
Demanian ratio c	12.4	11.5	12.8	13.1	11.5	13.4	12.5	6.5	12.7	10.7	10.8	11.2	11.1	9.7
R3 sensilla length	8	9	9	9	8.5	8	8.5	5.7	9.5	7.5	7.5	7.5	7.5	6.5
Head diameter	19	20	19	20	19	19	19	2.7	21	16	18	16	16	15
Amphid diameter	15	15	15	14	15	14	14.5	3.5	10	10	9	9.5	9.5	7.5
Amphid c.d.	24	22	22	22	22	23	22.5	3.7	26	17	20	19	19	17
Oesophagus length	350	295	290	295	280	280	298	8.8	330	295	270	250	245	235
Oesophagus c.d.	74	61	75	67	62	66	68	8.7	74	57	57	53	57	45
Maximum body diameter	87	68	85	78	69	78	78	10.2	95	62	67	63	67	45
Spicule length (chord)	63	60	63	62	64	60	62	2.7	—	—	—	—	—	—
a.b.d.	61	55	57	56	52	55	56	5.3	52	45	45	46	47	37
Cloaca to anterior supplement ( $\alpha$ )	247	243	147	195	150	160	190	24.0	—	—	—	—	—	—
Cloaca to anterior supplement ( $\beta$ )	320	295	245	287	225	265	275	12.7	—	—	—	—	—	—
Number of supplements	27	24	22	23	22	21	—	—	—	—	—	—	—	—
Tail length	250	235	205	230	220	210	225	7.4	260	220	210	165	200	200

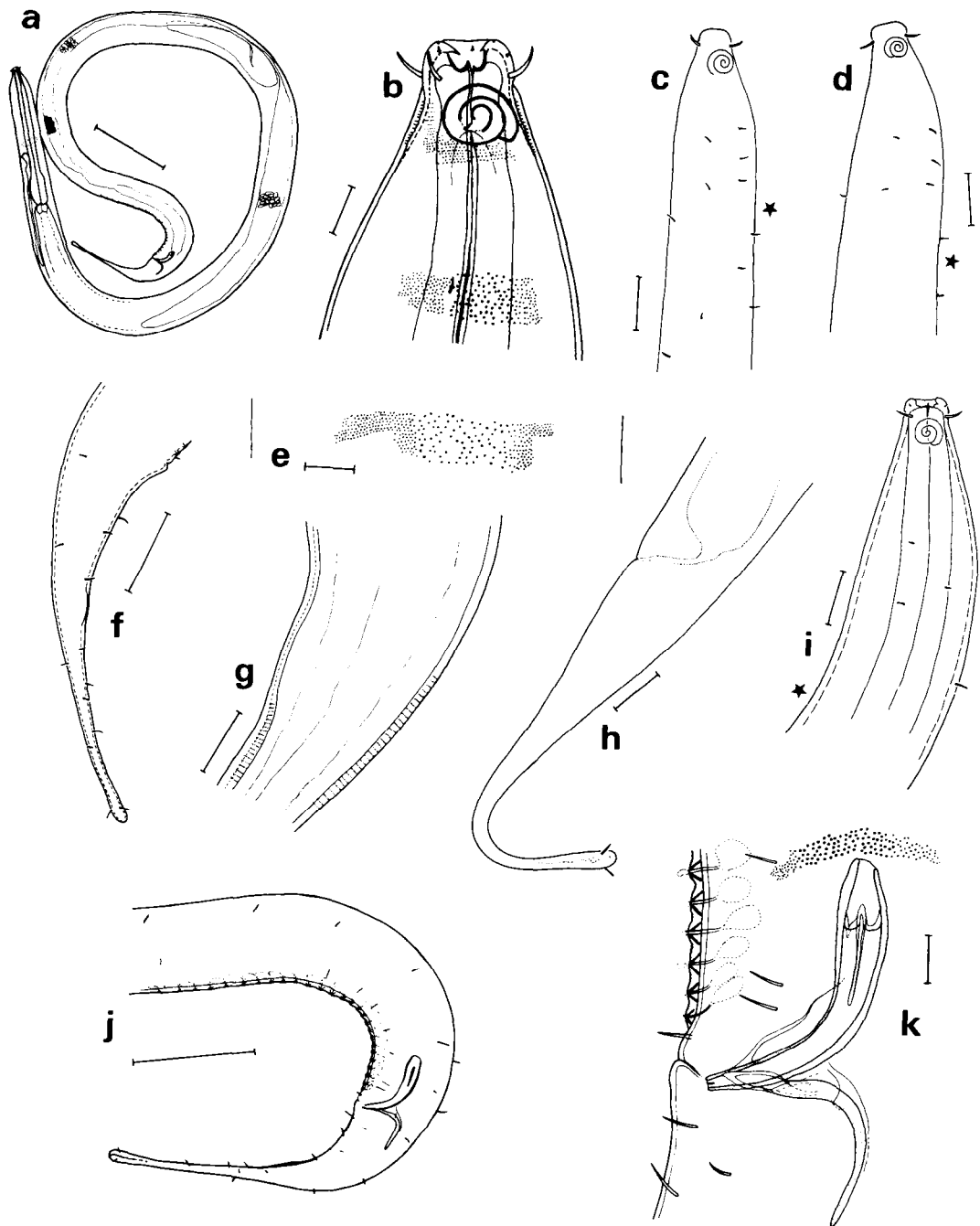
Spicules equal, curved; 1.0–1.2 a.b.d. as chord; 1.2–1.4 a.b.d. (68–72  $\mu\text{m}$ ) as arc. Gubernaculum with strongly curved apophyses which proximally are caudally directed. Ventral precloacal spine and 21–27 conspicuous precloacal supplements which extend 150–250  $\mu\text{m}$  anterior to the cloaca measured along the ventral side of the body (measurement  $a$ ) or 225–320  $\mu\text{m}$  (9–11% of total body length) as measured along the mid-line of the body (measurement  $\beta$ ). There is a very slight but distinct swelling resembling a flattened papilla between the conical and cylindrical parts of the male tail (Figs 1f, g, j & 2c, f). Two opposed testes: anterior to the left, posterior to the right of the gut.

Ovaries opposed and outstretched. Anterior ovary to the right, posterior to the left of the gut.

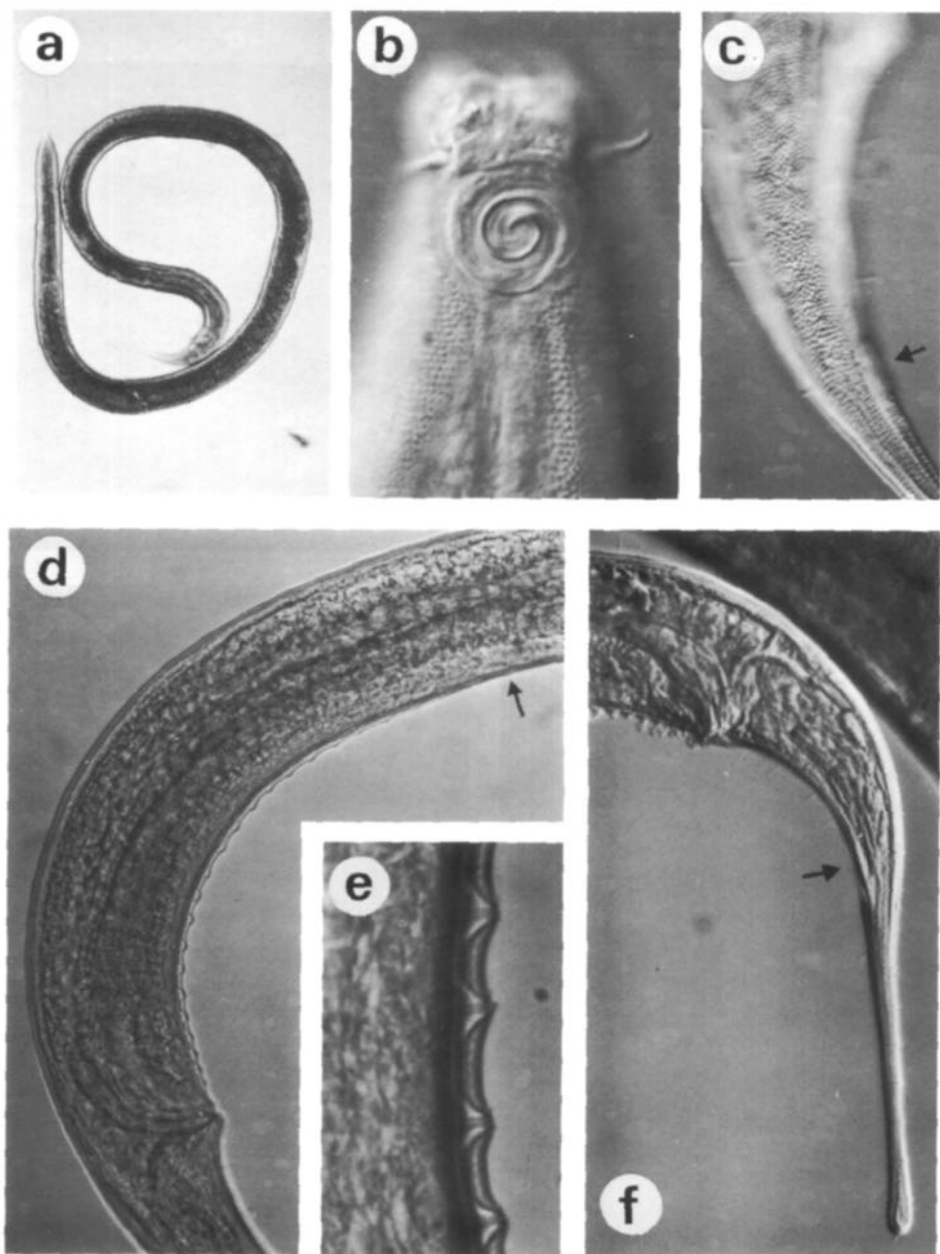
**DIFFERENTIAL DIAGNOSIS.** *Sabatieria kelletti* sp. nov. belongs to the *celtica*-group in terms of general body shape, cuticle punctation pattern, R3 sensilla length, amphid form and size, number of precloacal supplements and general tail shape. Indeed, the new species seems to be most similar to *S. celtica* Southern, 1914 itself, as redescribed by Lorenzen (1972), from which it differs in the range of supplement number (21–27 vs 15–22), more conspicuously narrowed and relatively smaller head (h.d. as percentage of posterior oesophagus c.d. 26–33% vs 33–42%), relatively shorter cephalic setae (0.4–0.5 h.d. vs 0.6–1.2 h.d.) and the presence in the male of a ventral caudal swelling or papilla.

**ETYMOLOGY.** The species is named after Mr Brian Kellett, my co-diver during the Antarctic peninsula collecting trip.

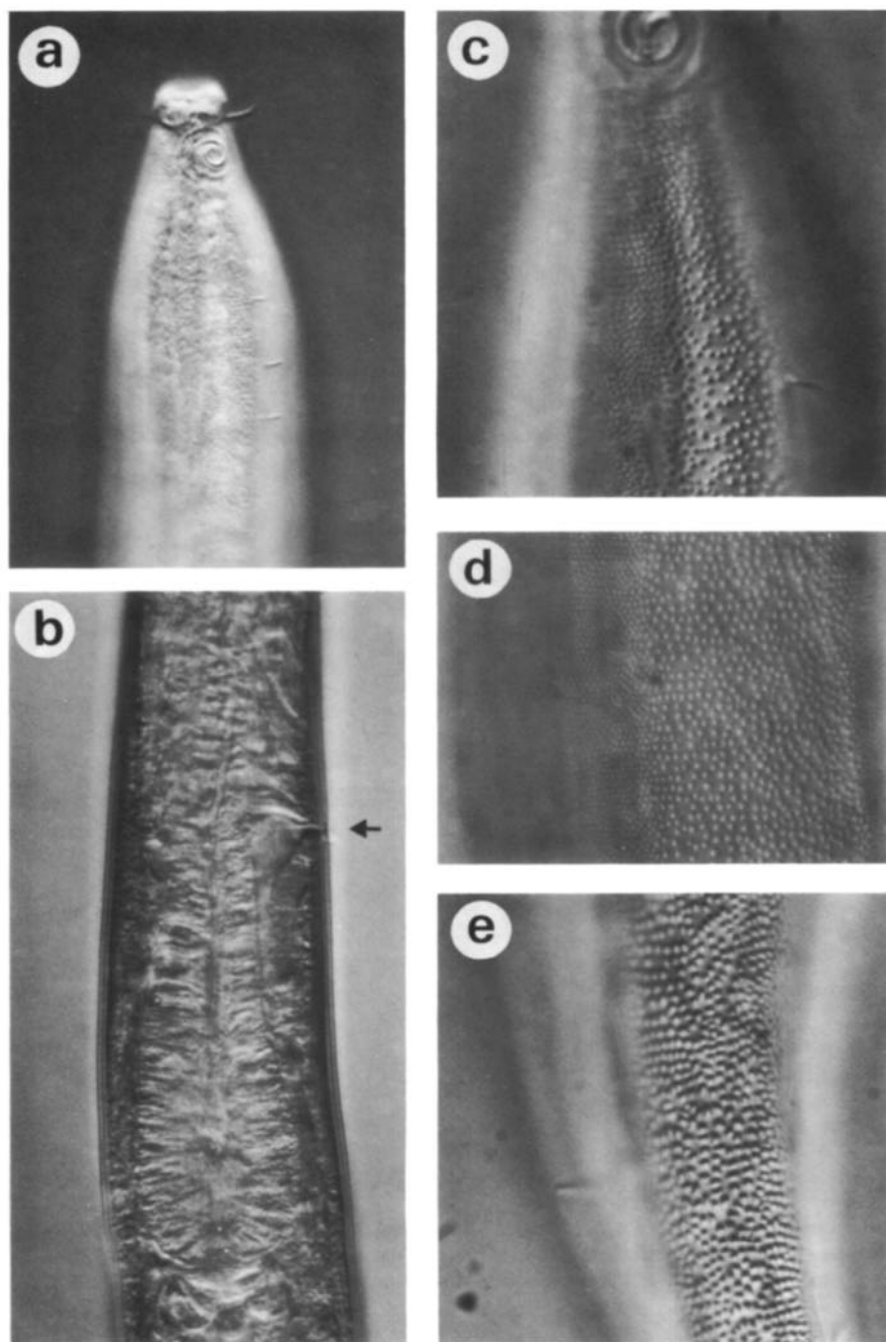
**REMARKS.** Because of the differing amounts of curvature in the posterior region of the males, measurement of the distance from cloaca to anteriormost supplement is subject to great variation (Table 1) even when an attempt is made to take into account the differing number of supplements among the specimens. For example, the ratio of the  $a$ -measurement to the number of supplements has a mean of 8.2 and a CV of 16.7%. However, this variation is less when the  $\beta$ -measurement is used, which should approximate the  $a$  of a straight worm: the ratio of  $\beta$  to supplement number has a mean of 11.8 and a CV of 7.8%. It would seem therefore that  $\beta$  would be the better measurement to report, although in view of the fact that  $\beta$  can be considerably larger than  $a$ , 1.2 to 1.7 times larger in *S. kelletti*, the exact method of measurement should also be reported.



**Fig. 1** *Sabatieria kelletii*: (a)  $\sigma 1$  whole body; (b)  $\sigma 1$  head; (c)  $\sigma 2$  anterior region; (d)  $\sigma 4$  anterior region; (e)  $\sigma 1$  lateral cuticle pattern mid-body; (f)  $\sigma 4$  tail region; (g)  $\sigma 6$  ventral caudal papilla; (h)  $\sigma 1$  tail; (i) J1 anterior oesophagus region; (j)  $\sigma 1$  posterior region; (k)  $\sigma 1$  copulatory apparatus. Bar scales: a = 200  $\mu\text{m}$ ; j = 100  $\mu\text{m}$ ; f = 50  $\mu\text{m}$ ; c, d, h = 30  $\mu\text{m}$ ; i = 20  $\mu\text{m}$ ; b, e, g, k = 10  $\mu\text{m}$ . Stars in c, d and i indicate ventral side.



**Fig. 2** *Sabatieria kelletii*: (a)  $\sigma$ 1 whole body; (b) amphid and R3 sensilla; (c) caudal cuticle punctations and position of ventral papilla arrowed; (d) posterior region showing precloacal supplements, the anteriormost (24th) is arrowed; (e) detail of supplements; (f)  $\sigma$  tail, postcloacal papilla arrowed.



**Fig. 3** *Sabatieria kelletii*: (a) anterior region showing row of three subventral cervical setae; (b) posterior oesophagus region showing excretory pore (arrowed) and posterior expansion of the oesophagus; (c) lateral cuticle pattern in post-amphid region; (d) lateral cuticle pattern mid-body; (e) lateral cuticle pattern on tail.