

Supplementary Table 1. Structural difference between French, Thai and Indian *Astraeus* specimens. IM: Immature basidiome; M: Mature basidiome

FEATURE	<i>Astraeus hygrometricus</i>		<i>Astraeus odoratus</i>		<i>Astraeus asiaticus</i>	
	France (Neotype) Phosri et al. 2013	India (Karnataka) Pavithra et al. 2015	Thailand (Holotype) Phosri et al. 2004	India (Jharkhand) (This study)	Thailand (Holotype) Phosri et al. 2007	India (Jharkhand) (This study)
Basidiomes Size in mm	Immature= 20–25 Mature = 36–38	Immature = 15–25 Mature = 35–46	Immature= – Mature = ≤ 65	Immature= 20–45 Mature = 48–62	Immature = 18.7 Mature =29.7	Immature=10–25 Mature = 15–40
Exoperidium (Surface)	<ul style="list-style-type: none"> • Surface smooth • Opening by cracking deeply 	<ul style="list-style-type: none"> • Surface smooth • Opening by vertical and reticulate cracking 	<ul style="list-style-type: none"> • Surface smooth • Opening by scaly cracked at maturity 	<ul style="list-style-type: none"> • Surface smooth • Opening by mosaic like cracking at maturity 	<ul style="list-style-type: none"> • Surface granulates • Opening by longitudinal cracked at maturity 	<ul style="list-style-type: none"> • Surface granulates • Opening by longitudinal cracked at maturity
Number of rays	13–14	7–13	3–9	5–7	5–12	9–12
Endoperidium Size in mm	<ul style="list-style-type: none"> • 13–14 (IM*) • Opening by irregular apical aperture (M) 	<ul style="list-style-type: none"> • 9–20 (IM*) • Opening by irregular apical aperture 	<ul style="list-style-type: none"> • 13–25 (IM*) • Opening by irregular apical mouth at maturity 	<ul style="list-style-type: none"> • 15–35 (IM*) • Opening by irregular pore 	<ul style="list-style-type: none"> • 13–24 (IM*) • Opening by irregular apical mouth at maturity 	<ul style="list-style-type: none"> • 12–30 (IM*) • Opening by tear forming an irregular apical pore
Gleba (Colour)	Pale brown (M*)	White (immature) and purplish brown (M*)	Purplish chestnut (M*)	Brown to coffee colour (M*)	White (*IM) and purplish chestnut (M*)	White (IM) and purplish powdery dark brown (M*)
Basidiospore Size in diam. (µm)	<ul style="list-style-type: none"> • 10–13.5 • Colour pale brown 	<ul style="list-style-type: none"> • 8–12 • Colour purplish brown 	<ul style="list-style-type: none"> • 7.5–15.2 • Colour purplish chestnut 	<ul style="list-style-type: none"> • 7.9–11 • Colour golden yellow to yellowish brown 	<ul style="list-style-type: none"> • 8.75–15.2 • Colour purplish chestnut 	<ul style="list-style-type: none"> • 8–14 • Colour golden yellow to yellowish brown
Ornamentation	<ul style="list-style-type: none"> • Spines 0.7–1.3 µm long • Less dense, rounded, narrow, short sparsely arranged spine coalescent 	<ul style="list-style-type: none"> • Regular, consistent and less folds 	<ul style="list-style-type: none"> • Spines 1.0–1.6 µm long • Less dense, rounded, long, narrow spine coalescent 	<ul style="list-style-type: none"> • Spine 0.9–1.55 µm long • Highly coalescent 	<ul style="list-style-type: none"> • Spine 0.9–1.4 µm long • Very dense, rounded, long, narrow tapered spine coalescent 	<ul style="list-style-type: none"> • 0.9–1.4 µm long • Very dense, rounded, long, narrow tapered spine coalescent
Capillitium Size in diam. (µm)	4.5–6.5	–	2.5–6.2	2–5	2.5–7.5	3.5–5.5
Odour when fresh	–	Mealy	Strong	Distinctive	Strong	Mild
Fruiting Seasons	May-August	May-August	May-June	June-August	May-August	May-September
Habitat	In sandy grassland	Sandy or lateritic soil	Sandy or lateritic soil in dipterocarp forest	Sandy or lateritic red soil in dipterocarp forest	Sandy or lateritic soil in dipterocarp forest	Sandy or lateritic red soil in dipterocarp forest