

Well done for a first attempt but it needs much more work. Good to see you are investigating larvae, an area much in need of detailed work as you have done here. Keep it up.

Page and line number	Issue	Comment
Page 1 Background and Discussion	You make two statements about habitat <i>Identifying species at the larval stage is crucial for habitat restoration</i> And <i>accurate identification is crucial for understanding their microhabitats.</i>	Be careful here you are overselling what you have done. You have not been able to identify the habitats from what you present here. Perhaps you could include a little information about the nature of the habitat where you collected your specimens as that would be very useful.
Paged 1 Results	Pronotum shape	Protergum shape (usually restrict use of notum to actual wing bearing segments)
Line 24	worldwide	Really? Worldwide? Perhaps rewrite
Lines 25-27	Crucial for habitat restoration etc	Same comment as above; you may be able to use this statement if you reword it carefully.
Line 35, 36	Likely reflecting their specific requirements	No this is not what you show. You show larvae that are very similar to other described Luciolinae larvae (which I will point out later on) and only in <i>P. valida</i> have you found something quite distinctive, and that is only in comparison with three other larvae. There are other Luciolinae larvae with dorsal tubercles that you do not address. Ballantyne & Lambkin 2000 addressed very similar larvae with dorsal tubercles that you could compare with.
37, 38	Accurate identification ...crucial for ..microhabitats	Is it really though? You are not yet showing that in this paper
Line 61	The lack of knowledge...which directly impact firefly populations	Suggest rewrite this sentence it does not make good sense as written

Lines 77, 78		As only two species of Pteroptyx thus far have well described larvae we clearly need much more
Line 95 rearing		I assume you reared your larvae through from egg to adult as you mention food throughout all larval stages. If this is so and you have clearly been successful then you need to expand this section – rearing larvae is difficult and others can benefit from your expertise. I also assume that you have different instars which you could identify and differentiate? You do not seem to have mentioned how you know which instar was which.
Lines 101-103		As above how did you know which instar was which? Any measurements?
Line 123 measurements		I think you should be quite precise in your explanation of just where you are making these measurements especially that of the length and width of the Protergum; there is a lot of margin for error here. Maybe specify within the coloured area, or between the tubercles?
Line 130	Length and width of whole body	How did you do this and not be subjective??
Line 138 taxonomic description		There are other references appropriate here. Ballantyne et al. 2015 scored larvae using 48 characters some of which are similar to yours. See also Ballantyne et al. 2022 for more larval characters.
Line 155 general characteristics		If you look at Ballantyne et al 2022:24 they give an outline of the basic design of Luciolinae larvae (with modifications of course as they were addressing

		specifically aquatic larvae). Your section could be improved if you did the same so your reader understands what they're seeing. You do not state that the overall body plan is quite similar to what had already been described and this leaves one wondering how many of those features mentioned in the other references apply here. If you were to apply what is outlined in Ballantyne et al. 2022 page 24 then your readers will get here a complete picture of what these Pteroptyx larvae look like. This relates especially to the ventral surface (median sternum, laterosternites and laterotergites in the abdomen), the structure of the thoracic segments 2 and 3 from below, and also the basic head structure. Yes it is just repetition but it needs to be said.
Line 155	Diagnosis?	This section can be much improved by indicating how Pteroptyx larvae differ from what is already known of other Luciolinae larvae. You are not telling us diagnostic features here if you do not mention other genera too (you are just distinguishing your four larvae from each other). It is very probable that larvae of a whole group of Luciolinae – Pteroptyx, Colophotia, Australoluciola, Pyrophanes, Medeopteryx etc are all of the same form. Make your point that we know very little about them (but we do know something!!) and this will

		enhance what your paper is about
Line 162 and elsewhere.	Colour descriptions	I think colour is inappropriate here as it seems to be quite variable anyway.
Line 169	Picture references	A good clear shot of the dorsal and ventral head with mouthparts intact is needed. The anterior margin of the dorsal head between the antennae often has a distinctive shape and I can't tell from what you present.
Lines 172-177	Description is inaccurate and does not match your figures	The antennae can be retracted into a long articulating membrane which you don't mention; the basal segment is short, segment 2 is as wide as the basal one but much longer; segment 3 is tiny by comparison in both length and width and have apical setae; the sense cone in this genus has characteristic dimensions – look at its height relative to segment 3 and its width also.
Lines 183-190	See how you might describe the head with a fused maxillolabial complex	Description of palpi here of maxilla does not match your figures – do you recognise a palpifer or a palpiger? The very largest segment at the base of the maxillary palp is usually referred to as a palpifer.
Line 190	sensorium	I could find no obvious sensorium in any of these pictures. Fu et al found in terrestrial species that such a structure was apical but you don't seem to say where it is.
Line 195	Texture of tergites	Possible to either describe this better or show us in a picture/
Line 197	Colour	Just say they were variable? Or is there some way to describe this to contrast with

		what you might see in other genera? It is a dull colour pattern isn't it?
Line 200	Legs	Legs are 4 segmented coxa trochanter, femur and tibiotarsus.
Line 205 and following		Expand on just what the structure of the abdomen is – you leave too much unsaid; see previous comments
Line 205 abdomen		What about segment 10? You can see the outline in your figures
Each species treatment	You give a diagnosis which is also your description of the species concerned. This is unsatisfactory. The diagnosis has to distinguish the species from any other <i>Pteroptyx</i> we know about. The description needs to be separate and may be repetitive, as you need to show what the specific features are of the species concerned (remember you have already covered what you think are generic features in your first section). In describing the tubercles can you say how they differ from one species to another? Don't say things like distinguished from ...by the shape of protergite and colour pattern on ventral side and leave it up to the reader to figure out what you mean, you spell out exactly what those differences are. You have done this quite well in some areas and not as well in others.	Split each section into two parts – short diagnosis so we can see just how they differ, and an expanded (if necessary) description which will include those features as well. Might it not be just as important to give a diagnostic section for the first instar larvae as well?
218 diagnosis and subsequent diagnoses		Distinguish each species from all known <i>Pteroptyx</i> species so include <i>maipo</i> too.

Line 218 diagnosis		Read this again – you can be quite specific about where the tubercles are – anterior, lateral, across posterior margin, at the posterior corners etc.
Line 228	Fade diamond shape	Faded? Be more specific. Is it a colour?
Line 230	where located a pair of light organs on ventral side	rewrite
Line 232	Episterna epimera	Have you identified these areas previously? How are we to know what they are?
Line 237		Great that you try to differentiate the first stage larvae. Can you devise a key for them as well? When do they approach the same form as the fifth stage larva?
Line 239	tubercles on all tergites formed except on protergite	So protergite does not have any tubercles developed yet in this first stage larva?
Line 240	which are pale on anterior and median region	Pale is not a colour
Line 241	uniformly fine granular distribute on	distributed
I did not go through the rest of the descriptions but you should be able to follow what I have already indicated above and make some changes for yourself.		Your descriptions of these larvae are your diagnoses. Can you not separate a diagnosis) which can be quite short) and then give an expanded description/redescription?
Line 317 Key to species	A dichotomous key has to have similar contrasting statements in each couplet. Your couplet 1 contrasts tergites smooth or rough, and then does not give any information about the pronotal length width or the colour of the ventral side.	Check your key to ensure you correct this.
Line 335 and following	How significant do you think any of these characters you mention here will be for people collecting in the wild? Or will that even be an issue? Will they identify in the laboratory?	

Line 360	Templates	I disagree with your interpretation here – larval morphology has been expanded as more and more larvae were found and many Luciolinae larvae have now been scored from morphological characteristics which show they are of as much use as the adult features in estimating relationships. The basic format for describing larvae started long before any Pteroptyx were described
Line 368	this prior assemblage of characters is not useful for species	Don't criticise – use this to show what you have achieved – you now can use more features as a result of this paper
Line 370	the character was not found to be variable across	But the problem is in how you define it here; I am not sure if by rough you mean having tubercles (which is enough in itself) or there is another feature which you have not described well nor illustrated. If it is important try to describe it better
Line 372	Position of spiracles	Somewhat subjective interpretation here, can you give us some pictures? Did you attempt to determine if they were all the same type of spiracle?
Line 383	intraspecific variation in the color pattern of the prosternum was examined	Reword this – you determined there was intraspecific variation
Line 386	morphological variation in <i>Pt. malaccae</i> adults was found in different	What significance is this here where you are discussing larvae/ Did you establish any variation in the larvae?
Line 424	Larval mouthparts	What you see here is typical of this family
Line 426	Retinaculum with teeth (it can have one or two)	In Pygoluciola the larvae were semiaquatic – difficult to hang on to prey? Fu described Pygo qingyu

		which attacked ants in a head to head combat – could the toothed mandibles help in such a situation? There are other examples of mandibles with teeth in terrestrial species (look at Abscondita).
Line 435	The sense cone of the antennae might be important for	I disagree with lines 435-437. Shape of the sense cone can vary (short and flat versus long and thin. There are references you can assess that describe the sense cone in aquatic species so you can reassess your statements here. Check your literature and look at Ballantyne et al 2015 data matrix where sense cones' length and width were scored for many species
Line 352 Discussion	You have made a good job here of trying to evaluate your results.	
Line 354	references	Ballantyne & McLean 1970 was the first modern day Pteroptyx treatment.
Line 360	morphological descriptions of Pteroptyx larvae have been used as templates	Not so – check the other references I have given you previously. There is a basic plan to the Luciolinae larvae which we have gradually discovered the more larvae we see.
Line 368	this prior assemblage of characters is not useful for species identification in Pteroptyx	But this assemblage of characters is useful to define the genus.
Lines 372-380	Position of mesothoracic spiracles	Somewhat subjective interpretation here can be improved with another set of pictures
Line 390	measurements	See previous comments; you need to specify just how you measured the entire length
Line 396	larva size will be irrelevant	It might be irrelevant we don't know yet
Line 400	There were variations in the morphometrics of species	Which species are you referring to here? Can you

	observed under the microscope	give a reference? Be more specific here.
Line 424	We assume this is also true for Pteroptyx species.	What has been done so far on Luciolinae mouthparts shows a remarkable uniformity of structure, with the variability being in the mandibles (are they toothed or not). We already know how these mandibles work – they are modified for injection of midgut juices to paralyse the prey – perhaps some more references here?
Line 435	The sense cone of the antennae might be important	You seem to be unaware of Ballantyne et al 2016 Zootaxa 3959 which listed many larval characters and scored larvae and included them in the phylogenetic analysis (look at figures 2b and C). The sense cone was addressed in characters 371, 372 and the complete scoring matrix would allow you to make comparisons between various larvae used here
Line 438	except for size of the sense cone of the antennae, which might indicate a different feeding habit?	You do not actually describe the sense cone for each species– are we expected to look at your figures and determine this ourselves? In Table 2 despite all the material you examined you can give only one ratio????? No range?
Figures	Nice figures well done CHECK ALL YOUR SCALE LINES	Where you have extra indications on the figures include that in the figure legend, they have to stand by themselves. Example figures 1, 3, figure 9 is this dorsal or ventral? Figure 24 needs better focus
	Not all figures show what you are describing (see above)	