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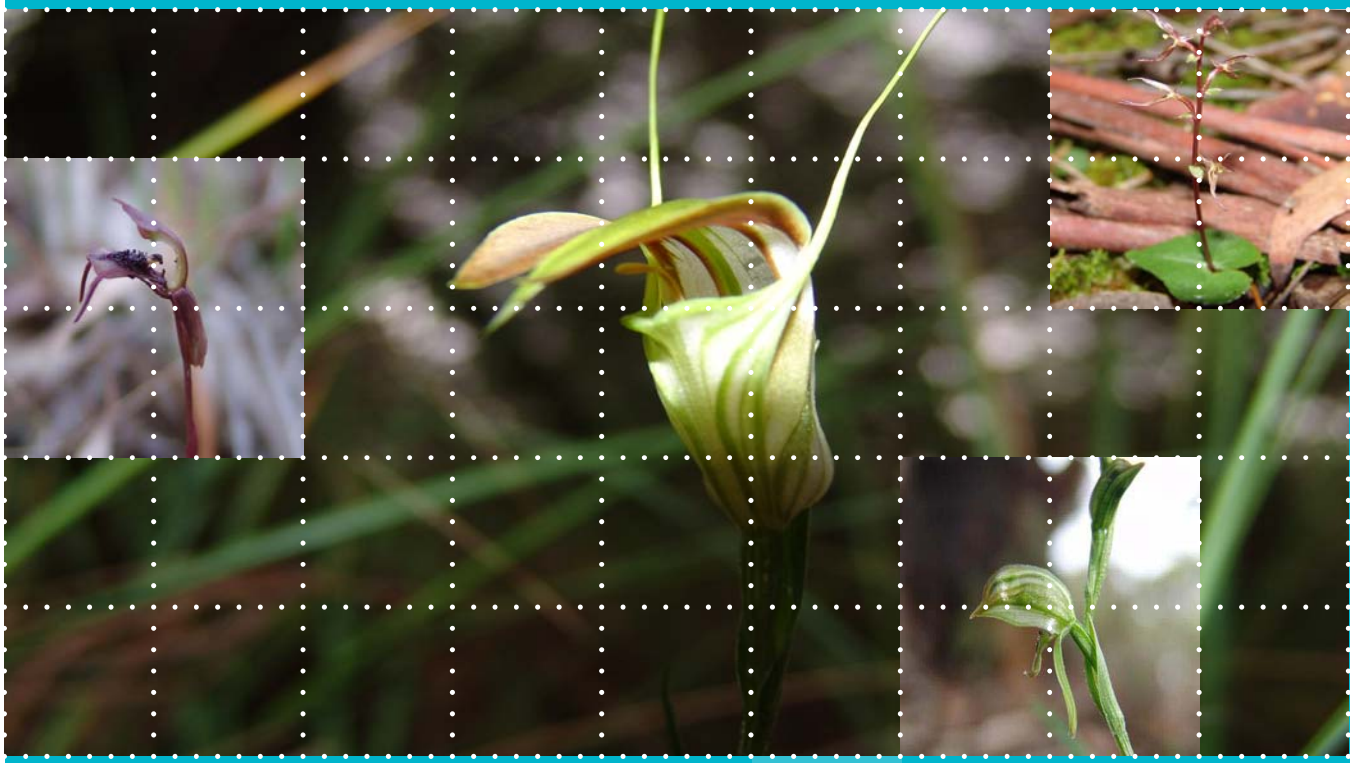
FINAL REPORT:

Targeted Threatened Orchid Survey for the Proposed Residential Subdivision at Glen Alvie Road, Grantville, Victoria.

ON BEHALF OF:

Beveridge Williams & Company Pty Ltd

August 2007



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Acknowledgments

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- Nicole Stow (Beveridge Williams & Company Pty. Ltd.) for project and site information.
- Geoff Glare (local orchid expert) for field assistance and for the confirmation of some orchid specimens.
- Andrew Hill (Ecology Partners Pty. Ltd.) for conducting the targeted field surveys and for reviewing the draft report.

Cover Photo: State significant Cobra Greenhood *Pterostylis grandiflora*, (Insets – Green-striped Greenhood *Pterostylis chlorogramma* (Bottom Right) , Autumn Bird-orchid *Chiloglottis reflexa* (Left) and Small Mosquito-orchid *Acianthus pusilis* (Top Right)) Grantville, Victoria (Ecology Partners Pty. Ltd.)

SUMMARY

Introduction

Ecology Partners Pty. Ltd. was engaged by Beveridge Williams and Company Pty. Ltd. to undertake a targeted orchid survey (focusing on significant orchid species) as part of the proposed residential subdivision at Glen Alvie Road, Grantville, Victoria. A targeted survey was recommended for native vegetation remnants within the study area during a previous ecological assessment undertaken within the study area.

Method

The targeted orchid survey was conducted across the entire study area on 17 July 2007. The entire study area was systematically traversed on foot, with the total number of all significant orchid plants recorded, while the locations of the plants were marked with a handheld GPS.

Results

Thirty-nine individuals of the state significant Cobra Greenhood were recorded along the northern boundary of the study area.

During the targeted flora survey an additional six regionally significant orchid species (e.g. Dwarf Greenhood, Autumn Bird-orchid) were recorded within the study area.

Legislative and policy implications

Based on the results of the targeted survey a referral to the Commonwealth Environment Minister (under the EPBC Act) is not required as no nationally significant species were recorded within the study area.

An FFG Act permit is required to 'take' all orchid species. However, in this instance, given that the proposed subdivision is located on private property an FFG Act permit is not required.

1 INTRODUCTION

1.1 Background

Ecology Partners Pty. Ltd. was engaged by Beveridge Williams and Company Pty. Ltd. to undertake a targeted orchid survey (focusing on significant orchid species) as part of the proposed residential subdivision at Glen Alvie Road, Grantville, Victoria. A targeted survey was recommended for native vegetation remnants within the study area during a previous ecological assessment undertaken within the study area (Hill and Organ 2006).

Several rare and threatened flora species, particularly orchid species of state or national significance (from DSE 2005 and EPBC Act), have been recorded from the local area and may occur within the study area (Organ and Hill 2005; Hill 1998; Geoff Glare pers. comm.). Two late-winter flowering orchid species (the nationally significant Green-striped Greenhood *Pterostylis chlorogramma* and the state significant Cobra Greenhood *Pterostylis grandiflora*) were targeted during the survey, as they were considered to be the most likely significant flora species to occur within the study area. Several Cobra Greenhood's were recorded during the previous flora and fauna assessment of the study area (Hill and Organ 2006), while both species have been recorded in the local area from similar habitats (Hill 1998; author pers. obs.; G. Glare, pers. comm.).

The current survey was undertaken during the flowering period of both species (Backhouse and Jeanes 1996), and at a time when detection is highest (Hill 1998; Botanicus Australia 1999).

1.2 Scope of Assessment

The objectives of the targeted survey were to:

- Review available literature (e.g. Flora Information System) and liaise with relevant orchid specialists;
- Conduct a systematic survey within the study area by a qualified Botanist to identify winter flowering orchids, and potential habitat for additional significant flora species, including areas of remnant native vegetation likely to be removed and/or disturbed;
- Identify any significant populations of indigenous flora species, and document appropriate GPS waypoints;
- Provide information in relation to any implications of Commonwealth and State environmental legislation and Government policy associated with the proposed development; and,
- Liaise with any key stakeholders (e.g. DSE, local government, local experts) when required.

1.3 Study Area

The current assessment was undertaken in a semi-rural area on the eastern side of Grantville, a small township on the Bass Highway approximately 85 kilometres south east of the Melbourne CBD. The study area is zoned Low Density Residential Zone under the Bass Coast Shire Council Planning Scheme; however, the Bass Coast Strategic Coastal Planning Framework adopted by Council in 2005, recommends that the site be rezoned to Residential 1 (N. Stow pers. comm.).

The study area supports remnant native vegetation along the northern boundary (i.e. along Colbert Creek), and is bounded by Glen Alvie Road to the south, and cleared areas to the east and west. An existing dwelling is present on the site.

1.3.1 Bioregion

According to DSE's Biodiversity Interactive Map (www.dse.vic.gov.au) the study area is within the Gippsland Plain Bioregion, which extends from Port Phillip Bay in the west to Bairnsdale in the east, between the southern slopes of the Great Dividing Range and north of Wilsons Promontory, excluding the Strzelecki Ranges.

2 METHODS

2.1 Nomenclature

Common and scientific names of vascular plants follow the Flora Information System (FIS 2005 version of the Department of Sustainability and Environment (DSE)) and the Census of Vascular Plants of Victoria (Ross and Walsh 2003).

2.2 Literature Review

Information from the FIS, AVW and EVC Benchmarks for the study area was reviewed, and other relevant literature (Hill and Organ 2006) was also referred to.

2.3 Database Searches

The FIS, a biological database maintained by DSE was reviewed. Information referring to matters (listed taxa) protected under the EPBC Act was also obtained from the DEW Protected Matters Search Tool.

2.4 Targeted Orchid Survey

The targeted orchid survey was conducted across the entire study area on 17 July 2007. The species specifically searched for are listed below (Table 1). The entire study area was systematically traversed on foot, with the total number of all significant orchid plants recorded, while the locations of the plants were marked with a handheld GPS.

Table 1. Targeted orchid species that occur within 10 kilometres surrounding the study area.

Sources used to determine species status:
EPBC *Environment Protection and biodiversity Conservation Act 1999* (Commonwealth)
DSE Advisory List of Threatened Flora in Victoria (DSE 2005)
FFG *Flora and Fauna Guarantee Act 1988* (Victoria)
National status of species is designated by:
EN Endangered
VU Vulnerable

State status of species is designated by:
e Endangered
v Vulnerable
r Rare
k Poorly Known
L Listed

Likelihood of occurrence:
1 Known occurrence
2 Habitat Present
3 Unlikely
4 No suitable habitat

Table 1. Targeted orchid species that occur within 10 kilometres surrounding the study area.

Scientific Name	Common Name (and Flowering Period)	No. of Records (FIS)	EPBC Act	DSE (2005)	FFG Act	Likelihood of occurrence
NATIONAL SIGNIFICANCE						
#Thelymitra epicactoides	Metallic Sun-orchid	-	EN	-	-	3
#Prasophyllum frenchii	Maroon Leek-orchid	-	EN	e	L	3
# Caladenia fragrantissima subsp. *orientalis*	Cream Spider-orchid	-	EN	e	L	4
#Pterostylis cucullata	Leafy Greenhood	-	VU	e	-	3
#Caladenia insularis	French Island Spider-orchid	5	VU	v	L	4
#Pterostylis chlorogramma	Green-striped Greenhood	2	VU	v	-	2
STATE SIGNIFICANCE						
Caladenia aurantiaca	Orange-tip Finger-orchid	2	-	r	-	3
Caladenia flavovirens	Summer Spider-orchid	1	-	r	-	3
Pterostylis grandiflora	Cobra Greenhood	5	-	r	-	1
Burnettia cuneata	Lizard Orchid	1	-	r	-	4

Source: Flora Information System (2005), Protected Matters Search Tool (DEW)

2.5 Assessment Qualifications and Limitations

As with any biological survey, there is a chance that the presence of some species or specimens may go undetected. A targeted flora survey aims at reducing the probability of this occurring, but it is an inherent risk that cannot be totally eliminated.

Recent disturbance as a result of livestock grazing (sheep and horses), cultivation, slashing and herbicide spraying also posed limitations on the flora and vegetation survey. Disturbance can significantly influence the diversity of species observed as many species may have had diagnostic characteristics removed (e.g. leaves), and therefore were not able to be detected.

3 RESULTS

3.1 Ecological Vegetation Classes and Vegetation Condition

This section describes the vegetation of the study area based on the review of existing information and the field assessment.

The literature review indicated several EVCs would have originally occurred on the site, and in the broader landscape, prior to European settlement of the Westernport Bay catchment (Pre-1750 EVC mapping). Recent mapping of remnant native vegetation (extant EVC mapping) at a regional level indicated the local area is now a mosaic of cleared agricultural land with fragments of native vegetation representative of several EVCs. Previous and current site assessments confirm the study area supports vegetation representative of EVCs, as well as cleared land, modified native vegetation and planted vegetation.

Overall, six vegetation types have been recorded in the study area. Three of these were representative of EVCs and the remaining three vegetation types were either exotic or modified native vegetation. The EVCs recorded within the study area during previous ecological assessments are listed in Table 2 (Hill and Organ 2006).

Table 2. *EVCs and their bioregional conservation status recorded within the study area (DSE website).*

Bioregion	EVC (number)	Bioregional Conservation Status
Gippsland Plain	Swampy Woodland (EVC 937)	Endangered
Gippsland Plain	Lowland Forest (EVC 16)	Vulnerable
Gippsland Plain	Herb-rich Foothill Forest (EVC 23)	Vulnerable

Overall, the quality of the remnant EVCs present and areas of modified or exotic vegetation within the site are generally of poor to moderate quality due to their modified structure, extensive weed invasion and land use history. Further information relating to vegetation condition and specific taxa recorded within the study area during the previous flora and fauna survey is provided in Hill and Organ (2006).

3.2 Targeted Survey Results

Thirty-nine individual state significant Cobra Greenhood plants were recorded within the study area during the current survey. The location and total number of individual Cobra Greenhood plants recorded within the study area are provided below (Table 3). Several individuals of this species were recorded in remnant native vegetation adjacent to the existing creek during the previous flora and fauna assessment within the study area (Hill and Organ 2006).

An additional six orchid species were recorded within the study area during the survey (Table 4). All of these species are regionally significant within the Gippsland Plain Bioregion (FIS 2005).

Table 3. Location of Cobra Greenhood *Pterostylis grandiflora* within the study area (21/7/2007).

ID	Way Point (UTM)	Number of plants recorded
22	55 H 372168 5748146	5
23	55 H 372146 5748141	8
24	55 H 372141 5748141	2
25	55 H 372139 5748155	3
26	55 H 372139 5748155	1
27	55 H 372143 5748153	2
28	55 H 372142 5748154	2
29	55 H 372135 5748153	2
30	55 H 372129 5748155	2
31	55 H 372131 5748155	6
32	55 H 372136 5748156	1
33	55 H 372137 5748157	3
34	55 H 372138 5748156	1
35	55 H 372132 5748152	1
Total		**39**

Table 4. Additional orchid species recorded within the study area (21/7/2007).

Scientific Name	Common Name
Acianthus caudatus	Mayfly Orchid
Pterostylis nana	Dwarf Greenhood
Microtis spp.	Onion Orchid
Thelymitra spp.	Sun Orchid
Acianthus pusillus	Small Mosquito-orchid
Chiloglottis reflexa	Autumn Bird-orchid

Note: All taxa listed are considered regionally significant within the Gippsland Plain Bioregion

4 IMPLICATIONS OF THE FINDINGS

One state significant threatened flora species, Cobra Greenhood was recorded in the northern portion of the study area during the current assessment at Glen Alvie Road, Grantville.

4.1 Legislative and Policy Implications

4.1.1 *Environment Protection and Biodiversity Conservation Act 1999*

An action requires approval from the Commonwealth Environment Minister if it will, or if it is likely to, have a significant impact on an endangered or critically endangered species, or on an 'important population' or critical habitat of a listed vulnerable species.

Two species (French Island Spider-orchid *Caladenia insularis* and the Green-striped Greenhood) have previously been recorded in the local area, and a further four orchid species or habitat, is predicted to occur within a 10 kilometre radius of the study area (EPBC Act Protected Matters Search Tool) (Table 1).

While there is no suitable habitat for the four additional species (Maroon Leek Orchid, Cream Spider-orchid, Leafy Greenhood and Metallic Sun-orchid) identified by the EPBC Act Protected Matters Search Tool potentially suitable habitat exists within the study area for Green-striped Greenhood. However, given that the targeted survey was undertaken during the flowering period of this species and that a systematic survey of the entire study area was undertaken, there is a low likelihood that this species occurs within the study area.

Implications for the proposed development

At this time, a referral to the Commonwealth Environment Minister is not required as there were no flora species of national significance recorded in the study area during the current surveys.

4.1.2 *Flora and Fauna Guarantee Act 1988*

The primary legislation for the protection of flora and fauna in Victoria is the *Flora and Fauna Guarantee* (FFG) *Act 1988*. The Act builds on broader national and international policy in the conservation of biodiversity. The Act contains protection procedures such as the listing of threatened species and/or communities of flora and fauna, and the preparation of action statements to protect the long-term viability of these values.

A protected flora permit under *Flora and Fauna Guarantee Act 1988* from DSE is required in order to 'take' listed flora species, species that are members of listed communities or protected flora on public land; and to clear or disturb protected flora species within the study area including *Acacia* species (except Blackwood *Acacia melanoxylon*), any of the Asteraceae (Daisies), and all orchids and all ferns.

All orchid species recorded during the current survey are listed as protected flora under the FFG Act. One orchid species, French Island Spider-orchid *Caladenia insularis*, listed as vulnerable under the FFG Act has been recorded within a 10 kilometre radius of the study area (FIS).

An additional four orchid species are listed as potentially occurring or their habitat as potentially occurring within the local area from the FFG Act (Table 1). However none of these species are likely to occur within the study area due to the lack of suitable habitat present.

Implications for the proposed development

At least 39 specimens of Cobra Greenhood were recorded in the northern portion of the study area during the survey. While an FFG Act permit is required to 'take' all orchid species, in this instance, as the proposed subdivision is not on public land an FFG Act permit is not required.

5 CONCLUSION

A targeted orchid survey was undertaken across the entire study area on 17 July 2007. In total, 39 individuals of the state significant Cobra Greenhood were recorded along the northern boundary of the study area.

During the targeted flora survey an additional six regionally significant orchid species (e.g. Dwarf Greenhood *Pterostylis nana* and Autumn Bird-orchid *Chiloglottis reflexa*) were recorded within the study area. Owing to the highly modified nature of the Gippsland Plain Bioregion, indigenous orchid species present within the study area are all considered regionally significant.

Based on the results of the survey a referral to the Commonwealth Environment Minister (under the EPBC 1999) is not required as no flora species of national significance were recorded within the study area during the surveys. A FFG Act permit is required to 'take' all orchid species; however, in this instance, as the proposed subdivision is not on public land an FFG Act permit is not required.

The proposed residential development should avoid areas of remnant native vegetation, particularly areas supporting the state significant Cobra Greenhood. Indeed, it appears that based on the most recent subdivision plan an area adjacent to Colbert Creek is proposed to be retained and managed in the future for conservation purposes. Finally, construction workers and future residents should be prevented from entering areas containing Cobra Greenhoods and other significant orchid species, and these areas should be fenced to ensure that they are protected in the future.

FIGURES

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700 350 0 700 Meters

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EP Dwg Number: 293 Fig 1
Drawn by: LS
Revision: a
Issue Date: 31/07/2006

Figure 1
Study area location
25-45 Glen Alvie Grantville Road
Grantville

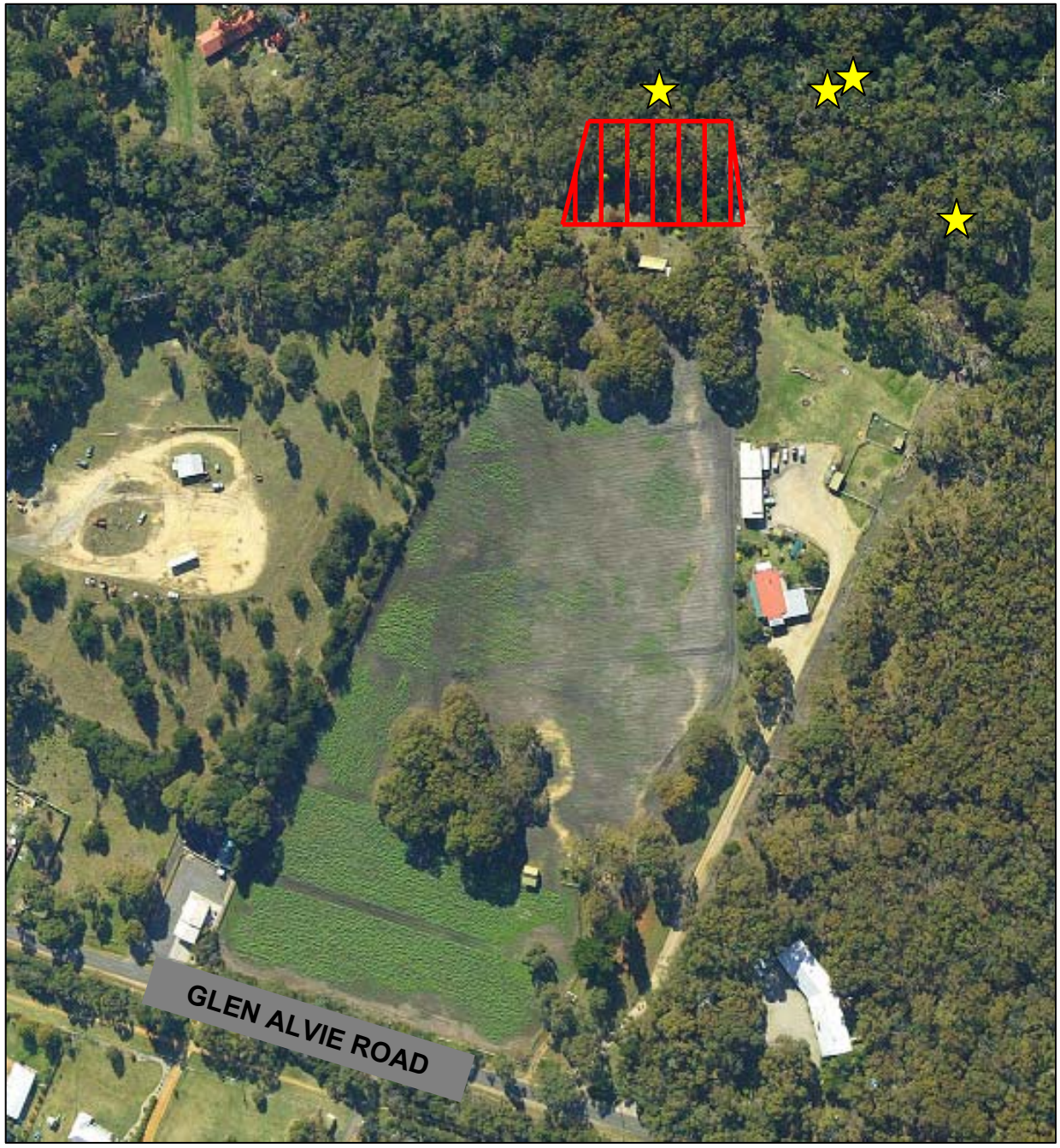

Figure 2. Location of State Significant Orchid Species:

Cobra Greenhood
Pterostylis Grandifora

Glen Alvie Road, Grantville, VIC

Current Recordings

Previous Recordings
(Hill & Organ 2006)

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