

## Publications on Asian Elephants in ‘Gajah’ and Other Scientific Journals

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### Introduction

The ‘silver jubilee’ of a journal based on a single species is a laudable and rare achievement. ‘Gajah’ began life as the ‘Asian Elephant Specialist Group Newsletter’ in 1986, became ‘Gajah - Newsletter of the Asian Elephant Specialist Group’ in 1992 and in 1993 morphed into ‘Gajah - Journal of the Asian Elephant Specialist Group’. Since 1986 a total of 34 issues of *Gajah* have been published. In the 25 years since its first publication, there were 10 years with one issue and 10 years with 2 issues of *Gajah* being published. In 1994 three issues were published. *Gajah* was not published in the years 1988, 1999, 2000 and 2005.

Here we assess the evolution of *Gajah* as a medium for publication of matters pertaining to Asian elephants (*Elephas maximus*), and examine it in the context of wider scientific publications on Asian elephants.

### Methods

The past 34 issues of *Gajah* were analyzed with regard to content, authors and the geographic origin of articles. To gain an overview of the types of publications in *Gajah* we divided them into two categories: ‘papers’ and ‘other articles’. ‘Papers’ were defined as original publications addressing some aspect of Asian elephants and ‘other articles’ as those that were of a more informative nature. Both ‘papers’ and ‘other articles’ were subdivided into 9 sub-categories based on the subject addressed (Table 1), and we assigned each published article to one of them.

Based on the text we identified whether a given paper was on wild or captive elephants, and the country of the subject elephants.

To assess the origin of contributing authors, we screened the addresses of all authors and divided them into ‘range country authors’ and ‘outside range country authors’. Where multiple addresses were given for a single author we used the first address provided. If a paper had several authors, authorship was apportioned proportionately (e.g. 4 authors: 3 from a range country = 0.75 and 1 from a non-range country = 0.25).

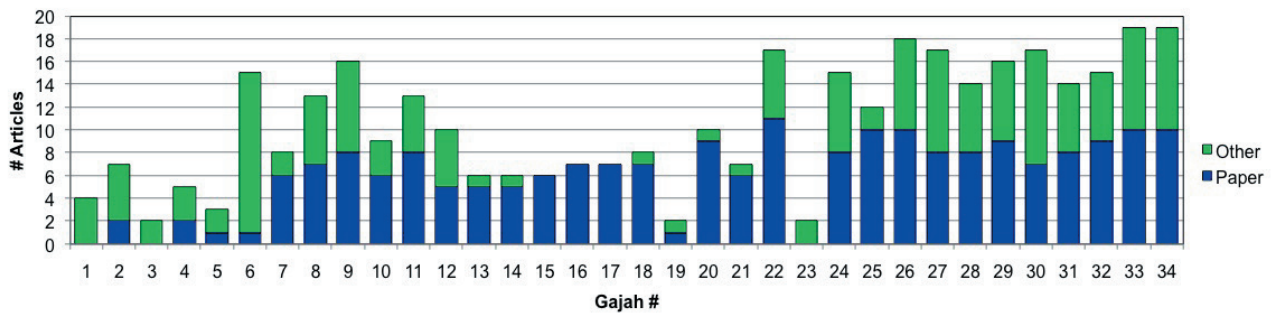
To compare the papers published in *Gajah* with those published in other journals, we analyzed 193 papers on Asian elephants published from 2008 to 2011. Several search engines on the internet were used to find every possible publication from January 2008 to July 2011. Only journal articles were included.

We applied the same criteria used for the *Gajah* papers to assign other journal papers to captive or wild, define the origin of authors and determine the subject addressed. An additional sub-category ‘morphology’ was added for the non-*Gajah* papers.

For the purpose of this analysis, we considered Borneo as a separate unit from Peninsular Malaysia and Indonesia although administratively

**Table 1.** Sub-categories of articles.

Papers	Other Articles
Conservation	News
Management	Meetings/Workshops
Veterinary	Appreciations
Methods	Literature (abstracts, references)
Behaviour	Book reviews
Demography	Correspondence
Ecology	Editorials
Genetics	Notes from co-chairs
History	AsESG member lists



**Figure 1.** Number of papers and other articles published in *Gajah*.

elephant habitat in Borneo falls mostly under the Malaysian state of Sabah and a small segment lies in the Indonesian state of Kalimantan. Consequently there were 14 ‘range states’.

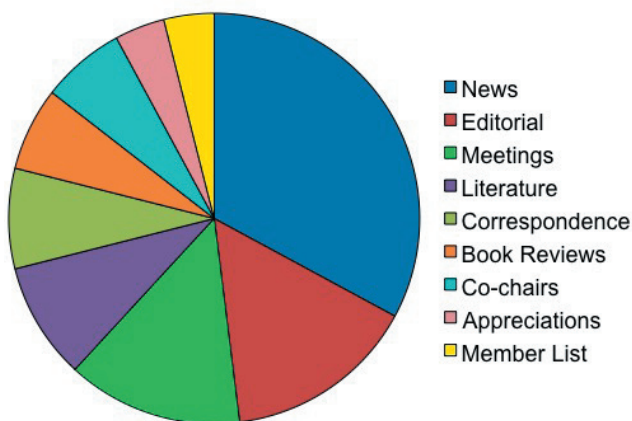
### Results

A total of 359 articles were published in the first 34 issues of *Gajah*. Articles per issue ranged from 2 to 19 with an average of 10.6 articles per issue.

In the last 34 issues, 207 ‘papers’ and 152 ‘other articles’ were published (Fig. 1).

#### Other articles

In the last 25 years *Gajah* carried 50 news items, 23 editorials, 10 comments from co-chairs, 12 items of correspondence and 6 appreciations. The list of current members of the AsESG was published 6 times. *Gajah* also carried 21 reports on meetings and workshops. New publications were announced in 14 articles and 10 book reviews were published (Fig. 2).



**Figure 2.** Proportion of types of ‘other articles’ published in *Gajah*.

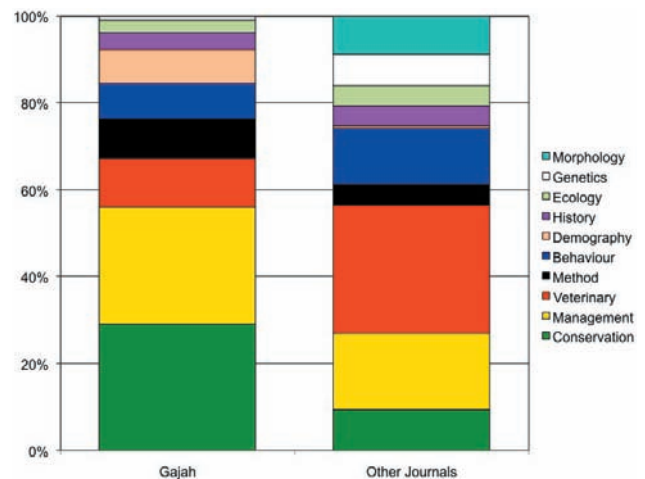
#### Paper subjects

Of the 207 ‘papers’ in *Gajah*, 29.0% were in the sub-category conservation and 27.1% in management. Veterinary aspects of Asian elephants were discussed by 11.1% of publications. There were also papers describing new methods (9.2%), on elephant behaviour (8.2%), and demography (7.7%). There were 8 (3.9%) papers on history, 6 on ecology and 2 on genetics (Fig. 3).

In ‘other journals’ 29.5% of the 193 papers were on veterinary aspects and 17.6% on management issues. The remaining 52.8% papers were on the other 8 subjects (Fig. 3).

#### Wild vs captive elephants

In *Gajah* 68.6% of the 207 papers were based on wild and 26.1% on captive elephants. Eleven papers (5.3%) included both wild and captive elephants. In ‘other journals’, 32.1% of the 193 publications were on wild and 66.3% on captive elephants, with 1.6% on both (Fig. 4).



**Figure 3.** Proportion of papers published by subject in *Gajah* and other journals.

### Geographic location of subject elephants

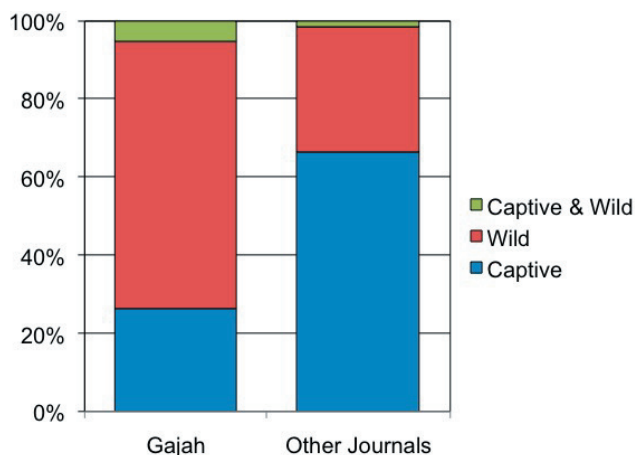
In respect of the geographic origin of the elephants, which were the subject of papers, in *Gajah*, 29.0% of papers were based on Indian elephants and 26.6% on Sri Lankan elephants. Sumatran elephants were the basis of 16 papers (7.7%). The number of papers published on other range country elephants was: Myanmar 8, Laos 5, Malaysia 5, Borneo 4, Nepal 4, Thailand 4, China 3, Cambodia 2, Vietnam 2, Bangladesh 1, and Bhutan none, which together comprised 18.4% (Fig. 5). Seven papers (3.4%) in *Gajah* were based on captive elephants kept in non-range countries.

In ‘other journals’, papers based on captive elephants held outside the range countries consisted 48.2% of publications. Indian and Thai elephants comprising of 17.6% and 11.9% respectively were the most common basis for papers on range country elephants. Publications on elephants from the other range countries totalled 16.6%, with 4 range countries (Borneo, Malaysia, Sumatra, Vietnam) having only one paper each (Fig. 5). There were no publications on elephants from Bhutan, Cambodia and Laos.

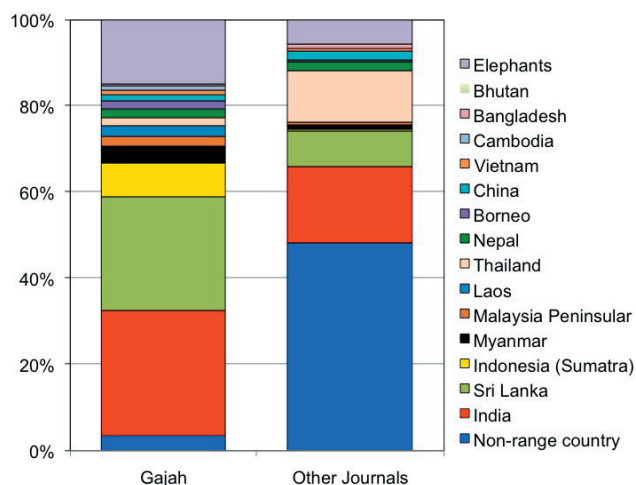
A total of 31 (15.0%) and 11 (5.7%) papers on elephants in *Gajah* and ‘other journals’ respectively, were on Asian elephants in general, not pertaining to any geographic location.

### Wild and captive elephant locations

Of 153 papers published in *Gajah* on wild



**Figure 4.** Proportion of papers published on wild and/or captive elephants.



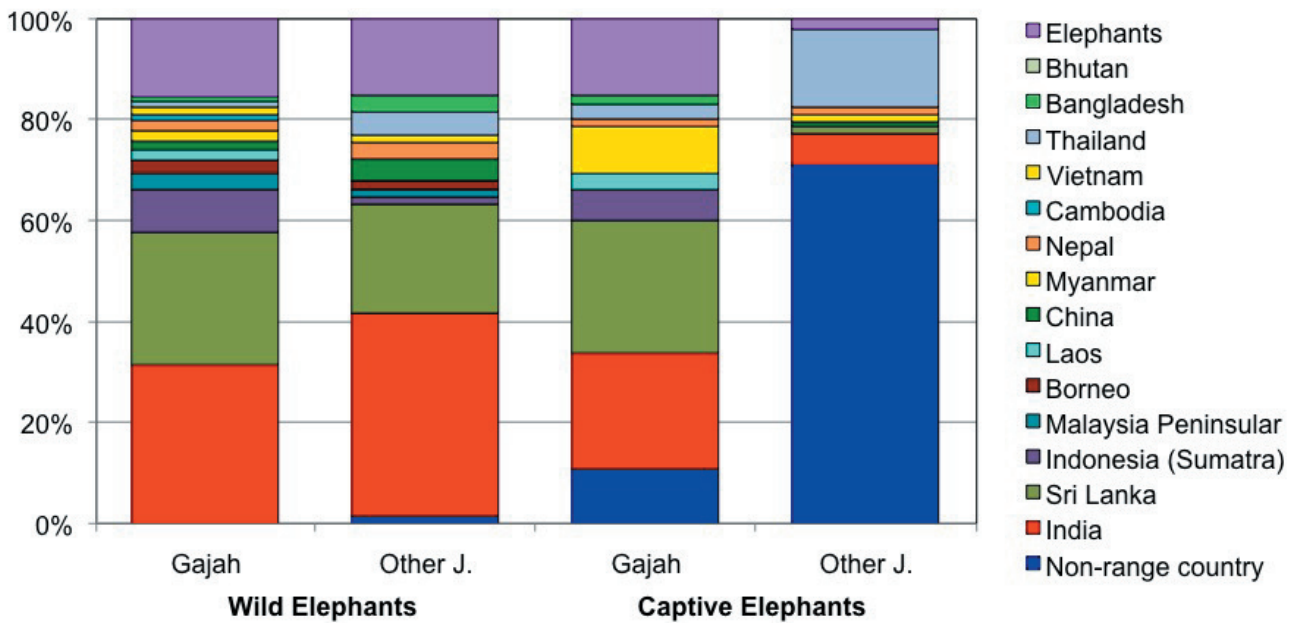
**Figure 5.** Geographic locations of elephants, papers were based on. ‘Elephants’ are papers discussing elephants in general, not from any particular location.

elephants, 31.4% were on Indian, 26.1% on Sri Lankan, and 26.8% on elephants from other range countries. Another 15.7% were on wild elephants in general. In ‘other journals’ 40.0% of 65 papers were on Indian, 21.5% on Sri Lankan and 21.5% on wild elephants from the other range countries, with 15.4% of papers written on wild elephants in general.

Of 65 papers on captive elephants published in *Gajah* 73.8% and 10.8% were based on elephants in range countries and outside range countries respectively. In ‘other journals’ 26.7% of the papers were based on elephants held in range countries and 71.0% outside range countries (Fig. 6). In *Gajah* 15.4% and in ‘other journals’ 2.3% of the papers were written on captive elephants in general.

### Author origins

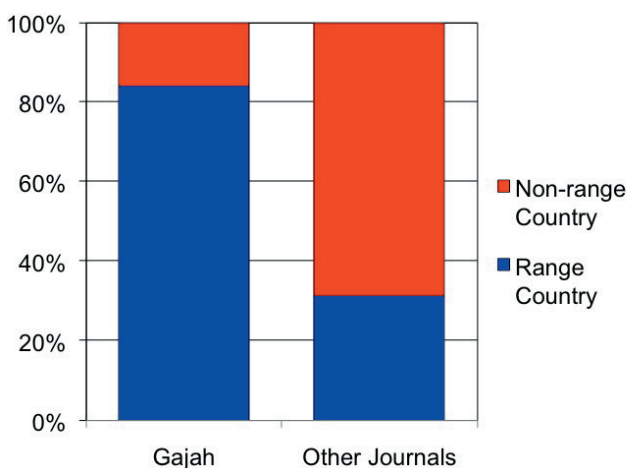
Of the papers in *Gajah* 84.0% were from range country authors and 16.0% from non-range country authors while in ‘other journals’ 31.1% of the authors were from range and 68.9% from non-range countries (Fig. 7). When looking at first authors only, the results were nearly the same (*Gajah*: 84.1% range-country and 15.9% outside; ‘other journals’: 31.1% range country and 68.9%). In *Gajah* 7.7% of papers had authors from both range and non-range countries. In ‘other journals’ 22.3% of papers had mixed authorship.



**Figure 6.** Locations of wild and captive study elephants used in *Gajah* and other journals.

## Discussion

*Gajah* is intended to reach a readership united by their interest in Asian elephants. The readers are anticipated to have a broad range of backgrounds - scientific and non-scientific, and a wide spectrum of interests from the conservation, management and study of Asian elephants to those who only view elephants as ‘interesting’ or ‘lovable’ animals. In the early life of *Gajah* issues tended to oscillate between having largely ‘papers’ or ‘other articles’. More recently a stable ratio between ‘papers’ and ‘other articles’ has been achieved (Fig. 1). Similarly the number of articles per issue tended to vary widely in *Gajah*’s early life but have gained more stability with maturity. The current balance between papers and articles



**Figure 7.** Proportion of authors from range and non-range countries in *Gajah* and other journals.

in *Gajah* could be considered fitting, in view of the target readership.

*Gajah* publications reflected a wide spectrum of subjects within both ‘papers’ and ‘other articles’. The range of subjects covered in *Gajah* ‘papers’ was comparable to that published in other scientific literature. The only sub-category that was missing in *Gajah* was morphology, which comprised a small percentage of publications in ‘other journals’. The relative proportions of subjects covered in *Gajah* and ‘other journals’ differed considerably with *Gajah* publications being dominated by conservation and management which together comprised over half of the papers, compared to ‘other journals’ where the largest representation (30%) was on ‘veterinary aspects’. The difference between *Gajah* and ‘other journals’ likely reflects differences in interests and work conducted, in relation to different sub-categories between range countries and non-range countries, with *Gajah* more representative of the range country context.

### *Elephant origins*

*Gajah* papers were heavily biased towards wild elephants with around two thirds of papers. In contrast, ‘other journal’ papers were equally biased towards captive elephants (Fig. 4). The difference again is likely to be explained by the greater range country affiliation of *Gajah*.



The focus of *Gajah* on wild Asian elephant conservation and management is a welcome finding, given the primary importance of conserving the Asian elephant *in-situ* within its range, which is the most desirable and important for the species' conservation. Conserving Asian elephants within the native range in the wild state also greatly benefits wider conservation, given the Asian elephant's role as a flagship species and an umbrella species.

In respect of the geographic origin of elephants, which provided the subject, *Gajah* papers were dominated by studies on Indian and Sri Lankan elephants which together represented more than half the publications. 'Other journal' publications were dominated by papers on (captive) elephants in non-range states. While few in number, *Gajah* publications had a wider representation of range states than 'other journals' (Fig. 5). Notably, publications of studies on Thai elephants were comparatively less in *Gajah* and publications on Bhutan elephants were absent in both.

When only wild elephant studies were considered more than half of the papers in *Gajah* as well as in the 'other journals' were on Indian and Sri Lankan elephants. All other range country studies together comprised one fourth of studies on wild elephants (Fig. 6). Both *Gajah* and 'other journals' reveal a paucity of studies in range countries other than India and Sri Lanka, which points to the need for greater efforts at encouraging and developing scientific research in most range countries.

In consideration of studies of captive elephants, almost three fourths of studies in *Gajah* were on elephants in range countries while a similar proportion of studies in 'other journals' was on elephants in non-range countries (Fig. 6). Again this dichotomy is likely due to the respective affiliations of those who publish in *Gajah* and 'other journals'.

#### *Author origins*

When considering the geographic origin of authors, the far greater majority of those who

published in *Gajah* were from range countries while the majority publishing in 'other journals' were from non-range states (Fig. 7). As one of the most important purposes of *Gajah* is to promote and advance scientific study, publication and knowledge of Asian elephants, in range countries, this is a welcome finding. Considerable representation of range country authors amounting to one third was also observed in the 'other journals'. Surprisingly, the proportion of first authors from the categories range and non-range, was numerically the same as when considering all authors in both *Gajah* and 'other journal' publications. This suggests that there was no great bias towards either category in first authorship. The number of papers with mixed authorship was greater in 'other journals', perhaps indicating a greater propensity for collaborative work between range country and non-range country scientists to be published in 'other journals'.

The greater representation of non-range country authors in other journals and range country authors in *Gajah* is also probably due to the lower ranking of *Gajah* as a scientific journal. More established scientists, of whom there are greater numbers outside the range countries, are likelier to publish in journals that are perceived to be of a higher standard. Continued improvement of *Gajah* will probably attract more non-range country authors in the future.

#### *Conclusion*

The geographic origin of studies and the number of papers published reveals that a large amount of data from range countries has been published in *Gajah*. Therefore, *Gajah* represents an important repository of information on Asian elephants for managers, students, researchers and other interested parties in range countries as well as outside. In this regard, the greater accessibility and higher profile of *Gajah*, enabled through the internet, increases its value and utility. Further development of ease of access and easier reference of *Gajah* material is something we should keep focusing on.