


Colledge, Susan, and James Conolly 2002 Early Neolithic agriculture in Southwest Asia and Europe: re-examining the archaeobotanical evidence. Archaeology International 5:44-46.

350. Linden Soft, Aachen


Fuller, D. Q. 1999 *The Emergence of Agricultural Societies in South India: Botanical and Archaeological Perspectives*. PhD, University of Cambridge, Cambridge.


Hillman, G. C. 1996 Late Pleistocene changes in the wild plant-foods available to hunter-gatherers of the northern Fertile


Kajale, M. D. 1979 On the occurrence of ancient agricultural patterns during the Chalcolithic periods (c. 1600-1000 BC) at Apegaon, District Aurangabad in central Godavari valley, Maharashtra, edited by S.B. Deo, M. K. Dhavalikar, and Z. D. Ansari.


Korisetter, R. 2004 Origins of plant agriculture in South India. In Archaeology as History in Early South Asia, edited by H. P.


Luce, G.H. 1985 *Phases of Pre-Pagin Burma. Languages and History*. Oxford University Press, Oxford.


Misra, B.B. 2000 Chalcolithic culture of the Northern Vindyas and the Mid Ganga Valley. In *Peeping through the Past* (Prof.


Renfrew, A. Colin 2001 At the edge of knowability: towards a prehistory of languages. Cambridge Archaeological Journal 10:7-34.


Saraswat, K. S. 1993 Plant economy of Late Harappans at Hulas. Purattattwa 23.


Sato, Yo-Ichiro, Ryujuji Ishikawa, and Hiroko Morishima 1990 Nonrandom association of genes and characters found in indica x japonica hybrids of rice. Hereditas 65:75-79.


Tengberg, M. 1999 Crop husbandry at Miri Qalat, Makran, SW Pakistan (4000-2000 B.C.). *Vegetation History and Archaeobotany* 8:3-12.


Witzel, Michael 1999 Early Sources for South Asian Substrate Languages. *Mother Tongue* Special Issue: 1-76.


Towards Sedentism

Figure 1. A diagrammatic representation of the mobility/sedentism spectrum, mapped along two variability, longevity of locales (up to permanence over generations) and duration of individual occupations (i.e. up to full years). Archaeological visibility and archaeobotanical preservation increases towards to top right.

Figure 2. Map of current best guess on distribution of wild progenitors of mung and urd, based on the author's study of herbarium collections in Pune and Calcutta (December 2004).
Figure 3. Map of distribution of wild progenitor of pigeonpea (Cajanus cajanifolia) spotted area (after van der Maesen 1986), and best guess wild distribution of horsegram, indicated by black leaves and inferred to extend through savannah zone (in grey), based the author’s study of herbarium collections in Pune and Calcutta (December 2004).
Figure 5. A map of wild rice distribution and likely zones of domestication. The distribution of the two wild progenitors of rice is plotted after Vaughan (1994). Some of these populations may be ‘feral’, e.g. along Malabar coast. The extent of rice cultivation ca. 3000 BC is indicated based on archaeological evidence (for China, after Yan 2002; for India, based on Fuller 2002, with updated evidence discussed in text).
Figure 6. An ‘isomorphism’ chart for major South Asian millet crops and rice. Lines of various types group cereals that have similar morphological attributes that might make them prone to linguistic confusion, association (semantic broadening) and semantic shift. Drawings by the author.
<table>
<thead>
<tr>
<th>Scientific name (with common synonyms), English name</th>
<th>Selected linguistics, especially Hindi, Indo-Aryan</th>
<th>Comments on geography of origins (reported archaeology?)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pulses (Fabaceae)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vigna mungo (L.) Hepper Eng. Black Gram</td>
<td>H. Urdu, <em>vedidda</em> (&lt;Lang. X&gt;; also cf. L. PDr. <em>uz-wuttu</em> DEDR 690)</td>
<td>South Asia – northern extent of wild progenitor at Mt. Abu (Rajasthan), but could include South Vindhyas (?) and Bihar hills (?) (Arc)</td>
</tr>
<tr>
<td>Vigna radiata (L.) (syn. Phaseolus radiatus) [some authors mistakenly apply Vigna mungo due to confusion with common name] Eng. Green Gram, Mung</td>
<td>H. mung, Skt. <em>mulga</em> (&lt;Lang. X)</td>
<td>South Asia – especially peninsula and western Himalaya foothills, could include Vindhyas (?) and Orissan hills (?) (Arc)</td>
</tr>
<tr>
<td>Macrotyloma uniflorum (Lam.) Verdcourt. (syn. Dolichos uniflorus Lam., more often, mistakenly, Dolichos biflorus auct. pl.) Eng. Horsegram</td>
<td>Kutili, OIA <em>kutili</em>, (&lt;L. PDr. <em>koi</em> DEDR 2153, &gt;Pmunda <em>kodaX</em>))</td>
<td>South Asia: savannas or dry deciduous woodlands (more towards Western India?) (Arc)</td>
</tr>
<tr>
<td><strong>Cucurbitaceae</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cucumis sativus L. Eng. cucumber</td>
<td>H. <em>khotra</em> (CDIAL 3697) (&lt;Lang. X), Munda <em>tayyar</em> (Osada 1995)</td>
<td>Wild and/or feral in Northern and Eastern India (as well as Yunnan and SE Asia)</td>
</tr>
<tr>
<td>Pracitrullus fistulosus (Sticks)</td>
<td>H. “inda”</td>
<td></td>
</tr>
<tr>
<td>Pang., Eng. Indian squash melon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Momordica balsamina L., Eng. Balsam apple</td>
<td>H. “mokha”</td>
<td></td>
</tr>
<tr>
<td>Melothria semivagans (Lour.) Cogn. (syn. Schima umbellata Thw., Momordica umbellata Roxb.) Eng. mouse cucumber, little cucumber</td>
<td>H. “tarali” (Ambasta et al. 1986), H. “Amanitul, kundri” (Maheshwari and Singh 1965), Beng. “kudari” (Watt); Santal “at” (Watt); Tel. “bid-danda” (Watt); Mah. “gametta, gometti” (Watt);</td>
<td>Wild throughout India and Southeast Asia. Not cultivated(?), but eaten.</td>
</tr>
<tr>
<td>Other</td>
<td>Common Name</td>
<td>Geographic Origin</td>
</tr>
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<td>-------------------</td>
<td>--------------------------------------------------</td>
<td>------------------------------------------------------------</td>
</tr>
</tbody>
</table>

Table 1. List of field crop species, excluding cereals, that are candidates for domestication in Gangetic India or Himalayan foothills. The second column includes comments on historical linguistics, including entries from CDIAL (Turner 1966), and if available Old Indo-Aryan reconstructions (*) from Masica (1979), which in most cases can be suggested to derive from Masica’s ‘Language X’ (cf. Fuller 2003d), or Witzel’s Para-Munda (Witzel 1999; 2005); additional names reported from botanical sources (Watt 1889-1893; Maheshwari and Singh 1965; Ambasta et al 1986) Third column includes comments on the geography of origins. Those species with archaeological records are indicated by Arc.
<table>
<thead>
<tr>
<th>Cereal Species</th>
<th>Chinese Name</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Oryza sativa</em> (rice)</td>
<td>大米 (Da Mi)</td>
<td>‘big mi’ - The basic mi = rice.</td>
</tr>
<tr>
<td><em>Setaria italica</em> (common foxtail millet)</td>
<td>小米 (Xiao mi)</td>
<td>‘little mi’</td>
</tr>
<tr>
<td><em>Panicum miliaceum</em> (broomcorn millet, hog millet)</td>
<td>黄米 (Huang mi)</td>
<td>‘yellow mi’ - [sticky varieties]</td>
</tr>
<tr>
<td><em>Zea mays</em> (maize)</td>
<td>玉米 (Yu mi) [Northern China, standard]</td>
<td>‘jade mi’</td>
</tr>
<tr>
<td><em>Sorghum bicolor</em> (Sorghum)</td>
<td>高粱 (Gao liang)</td>
<td>‘tall liang’ - original liang prob. <em>Setaria</em>, known from Oracle bone (Chang 1983)</td>
</tr>
<tr>
<td><em>Triticum aestivum</em> (bread wheat)</td>
<td>小麦 (Xiao mai)</td>
<td>‘small mai’ - Original mai prob. wheat</td>
</tr>
<tr>
<td><em>Hordeum vulgare</em> (barley)</td>
<td>大麦 (Da mai)</td>
<td>‘large mai’</td>
</tr>
<tr>
<td><em>Secale cereale</em> (rye)</td>
<td>黑麦 (Hei mai)</td>
<td>‘black mai’</td>
</tr>
<tr>
<td><em>Avena sativa</em> (oats)</td>
<td>燕麦 (Yan mai)</td>
<td>‘swallow [bird] mai’</td>
</tr>
<tr>
<td><em>Fagopyrum esculentum</em> (buckwheat)</td>
<td>荞麦 (Qiao mai)</td>
<td>Qiao specific to this crop, loanword?</td>
</tr>
</tbody>
</table>

Table 2. An example of linguistic classification of cereals, in modern Mandarin Chinese, that indicates the semantic overlap between millets and rice, as opposed to other cereals.
### Scientific name (with common synonyms), English name | Linguistics | Comments on geography of origins (reported archaeology?)
---|---|---
**Alocasia macrorrhiza** Schott (incl. *Alocasia indica* (Roxb.) Schott), Eng. Giant taro | H. “mankanda”, Skt. “manaka”, ? Pkt. Ālu--(CDIAL 1388) (see below) | Eastern India and/or SE Asia |

Table 3. The major tuber crops of South/Southeast Asia. The second column includes comments on historical linguistics, including entries from Turner 1966 (CDIAL), Burrow and Emeneau 1984 (DEDR), and if available; additional names reported from botanical sources included in quotation marks (after Watt 1889-1893; Maheshwari and Singh 1965; Ambasta et al 1986). Third column includes comments on geography of origins.