

## GCK Version History

This is a somewhat cryptic explanation of the changes that have occurred to GCK since it was first released for testing.

### Version 1.1B4

Differences from GCK 1.1B3

Bug Fixes:

- Fixed a number of problems that caused crashes with multi-trait problems. These were particularly serious when one of the traits had multiple alleles but also caused problems when one of the traits was pleiotropic or controlled by more than one locus.

### Version 1.1B3

Differences from GCK 1.1B2

Bug Fixes:

- In the construction kit it was possible to assign a blank model a non-zero probability. This is no longer allowed.

Interface Changes:

- Added the Model “No Phenotype” to the One Locus Classical set of models. This is a useful alternative for the ‘invisible’ phenotypes: Sterility, Lethality, and Recombination. I.E., Lethal 50%; No Phenotype 50%.

### Version 1.1B2

Differences from GCK 1.0.3

Added a number of genetic phenomena including:

Lethality, sterility, pleiotropy, genetic interactions, and sex limited/influenced traits.

The interface changes are confined to the construction kit the normal user interface is unchanged.

See **1.1B2 Notes** for more details.

### Version 1.0.3

Differences from GCK 1.0.2:

Bug Fixes:

- Fixed a problem displaying the summary chart and chi squared chart in a monoeocious problem.
- Fixed several notepad problems including one that could cause serious problems when printing more than a single page.

### Version 1.0.2

Differences from GCK 1.0.1:

Interface Change:

- Changed the misleading ‘Probability of chromosome switch:’ in the genetic constraints editing dialog box to the inverse probability of linkage.

### **Version 1.0.1**

Differences from GCK 1.0:

Bug Fixes:

- Fixed several more places where the watch cursor was displayed inappropriately.
- Fixed a bug that caused a crash when selecting Copy Window Data and all vials were in icon form.
- Fixed a possible crash while loading a saved problem.
- Fixed a bug that could cause flies to become unselectable after opening a saved problem and dragging a pane control.
- Improved the initial placement of vials and other windows.

### **Version 1.0**

The first non-beta version of GCK.

Differences from GCK 1.B15:

Bug Fixes:

- Fixed a bug that caused the watch cursor to be displayed inappropriately while editing problems.

### **Version 1.B0.15**

Differences from GCK 1.B14:

Interface Changes:

- Added pane control cursor to vials
- Changed the meaning of the customization parameter <mAlleleProb> from problem wide to per locus.
- Added a TNAM ResEdit template so that users familiar with ResEdit can change the names of traits.

Bug Fixes:

- Fixed a bug that caused Summary Chart, Chi Squared, and CrossMatrix control panels to change when a problem was saved and reopened.

### **Version 1.B0.14**

Differences from GCK 1.B13:

Interface Changes:

- In response to lots of user confusion, access to customization has been changed. The old Edit Problems option no longer exists. You now edit problems directly from the initial cover page. See the new manual for details.
- Vial and notepad zooming behavior has been dramatically improved. Now if you zoom a vial it will expand and the pane control will move so that you can see the vial's entire contents.
- The behavior of the pane control has been improved. There is no longer an artificial limit on how far you can move a pane control. The cursor now changes shape over a pane control so that they are easier to recognize.

- The notepad icon behavior has changed so that it now looks empty when it is empty and looks written on when it is not empty.
- The Cross Matrix has been changed so that sex is always shown on the matrix.
- Double clicking on the second selected organism will now cross the two organisms.
- The Close Window menu option has been implemented.
- The Cross menu has been reorganized so that the most used items appear at the top.
- The behavior of the Chi Squared worksheet has been changed so that the warning about statistical validity is displayed once per program execution (if applicable).
- The help messages have been improved and the behavior of help windows has changed a bit.

#### Bug Fixes:

- Fixed several problems with low memory so that GCK will now always warn the user when memory is low and will (I think) never crash because of low memory
- Improved a number of cosmetic things.
- Removed several unimplemented menu items.
- Fixed a bug that caused very large analysis worksheets to freeze on opening.
- Fixed several problems that caused some windows to be too large to display on a 9" screen.
- Fixed several difficulties with problems with very large numbers of traits (>4).
- Fixed a bug that caused GCK to forget the name of a saved problem.

### **Version 1.B0.13**

#### Differences from GCK 1.B12:

- Fixed a bug which caused an occasional crash when saving or restoring a problem after destroying vials.
- Fixed a bug which led to an incorrect Cross Matrix after saving and restoring a problem. There is still a minor problem in that deleted vials may show up in the cross matrix.
- When quitting, the dialog box that asks you if you want to save changes did not quite work correctly. Hitting return should have saved the file but it did not.

### **Version 1.B0.12**

#### Differences from GCK 1.B11:

- Fixed a bug in Cleanup of the cross matrix which caused GCK to lock up.
- Fixed a bug which caused GCK to crash when several things were done with iconized vials (including saving any problem with an iconized vial).

- Fixed a problem that led the Chi Squared worksheet to forget the expected ratios when a problem was saved.
  - Fixed the appearance of the summary chart picture extracted with 'Copy Window Graph'.
  - Fixed a bug which caused a crash when a vial containing a selected organism was closed.
  - Fixed a bug which caused a crash when shift clicking to select a vial or organism when there were no previous selections.
- 
- Customization has been reorganized somewhat to separate the strictly genetic parameters from other parameters that I have called organismic.
  - The size of the field population can now be controlled independently of the size of other vial populations.
  - Crosses can now be restricted to virgin organisms. This is particularly useful when you want to get at qualitative reasoning by restricting population sizes.
  - Organism populations are now sorted when first displayed in a vial.
  - The Edit Traits, and Chromosome Map menu options have been removed for the time being since they have never been properly implemented.

### **Version 1.B0.11**

Differences from GCK 1.B10:

Bugs:

- Fixed a problem with vials that caused the phenotype names to disappear if abbreviate names was toggled while a vial was collapsed.
- Fixed a bug in the Chi Squared worksheet that caused p values of 1.0 to be suppressed.
- Fixed a bug in the Cross Matrix that caused some vials not to appear properly when sex was turned on.

Major Interface Changes:

- Changed name of "Preferences" menu to "Utilities".
- Deleted the "Vials" menu and moved "Abbreviate Names" and "Destroy Vials" to the new "Utilities" menu.
- The original "Summarize Vials" command is gone and replaced by "Summarize Chart" on the "Analysis" menu.
- Added new commands "Clean Up", "Clean Up Options", and "Edit Traits" to the "Utilities" menu.
- The Cross Matrix will now bring up ALL vials corresponding to a particular phenotype cross if the Option key is held down while double clicking.

### **Version 1.B0.10**

Differences from GCK 1.B09:

- Fixed problem that caused Abbreviate Names to misbehave.
  - Fixed a couple of minor problems in Save/Restore
- The order of phenotypes in a vial which should be the same for every vial could get scrambled after save/restore
- Fixed 'Set Test Organism' to ensure that the test organism window is brought forward.
  - Added a Total to the Summary Chart.
  - Added the vial population to the Copy Table Data from the Summary Chart

### **Version 1.B0.9**

Differences from version 1.B0.8:

- A couple more text editing bugs have been fixed.
- The Summary Chart analysis worksheet has been added.
- All Analysis worksheets now use the same set of traits by default instead of starting with a random trait.

Known Bugs:

- Saving a Chi Squared worksheet does not save the expected ratio numbers, they are reset to 1.

### **Version 1.B0.8**

Differences from version 1.B0.7:

- Most of the bugs referred to in the 1.B07 notes have been fixed.

### **Version 1.B0.7**

Differences from version 1.B0.6:

- This version is much **less** stable than version 1.B06. Don't use it unless you have to! The primary reason for this is that the notepad stuff was totally re-written. It will be much better than it was, but for the moment it has lots of bugs.
- All tables that allow you to drag rows and columns and scroll now automatically scroll when you drag 'off the end'. Unfortunately there are still a few bugs in this.
- Vials can now use Copy Window Data to export their data to the clipboard.
- This is the first version to have a semi-real manual. Evaluating the manual is the only excuse to use this version.

### **Version 1.B0.6**

Differences from version 1.B0.5:

- Changed behavior of Chi Squared Analysis so that any category with an expected ratio of 0 is totally dropped from the analysis.

- 'Copy Window Data' (on the Edit menu) will now copy the data in a Chi Squared window to the clipboard in tab delimited text format. This form is suitable for export to a word processor or a spreadsheet. Are there other GCK windows that could usefully export their data in this way?

### **Version 1.B0.5**

Differences from version 1.B0.2:

- Changed the name of the 'Data' menu to 'Analysis'.
- Added Chi Squared testing option under Analysis menu. Check the Help system for details on using it.
- Added a 'Copy Window' entry to the 'Edit' menu. This will always copy a picture of the frontmost window to the clipboard. Removed the corresponding functionality from the 'Copy' item. It is now only functional for text.
- Made Save and Save As work correctly.
- Unfortunately, files saved with previous versions cannot be read by this version.
- Slightly improved the operation of notepad cutting and pasting. You can now cut and paste mixed text and pictures between notepads (though not to another program, only text will transfer that way). There are still many problems with mixed text and pictures in notepads. We are currently working on a complete rewrite of the responsible code.

## **Version 1.B0.2**

Differences from version 1.B0 (First Beta release):

Bug Fixes:

- The bug which caused a crash if the mouse was clicked in the parental information part of the field vial has been fixed.
- A bug which occasionally caused parents to appear selected after a restore from saved problem has been fixed.
- A bug which caused crashes when restoring problems involving multiple alleles has been fixed.

New Stuff:

- Added Arista and Bristle traits to the trait data base.
- Made summaries and test organism displays use abbreviated names if Abbreviate Names is on.
- Added the Cross Matrix option under the Data Menu. Check the Help system for details on using it.