Table 5. Values of Correction Term $c = i - N.\overline{P}_i$

i/N	N = 20	30	40	50	75	100	125
1/N	.4464	.4438	.4424	.4415	.4405	.4400	.4400
.1	.4936	.5049	.5104	.5135	—	.5190	—
.2	.5318	.5373	.5400	.5420	.5438	.5440	.5440
.3	.5586	.5628	.5648	.5660	—	.5680	—
.4	.5822	.5853	.5868	.5880	.5888	.5890	.5890
.5	.6034	.6060	.6072	.6080	—	.6090	—
.6	.6224	.6240	.6248	.6255	.6262	.6260	.6260
.7	.6384	.6393	.6396	.6400	—	.6400	—
.8	.6506	.6504	.6500	.6500	.6495	.6490	.6490
.9	.6578	.6546	.6528	.6515	—	.6490	—
1.0	.6688	.6624	.6580	.6545	.6488	.6450	.6410

Table 6. Accuracy of Proposed Formulas for Plotting Positions

N = 50

i	c	Δy	c	Δy	c_1	Δy	c_2	Δy
1	0	.25506	0.5	-.04814	.4934	-.04245	.4930	-.04211
2	"	.12185	"	-.00533	.4968	-.00433	.4960	-.00415
3	"	.08085	"	-.00061	.5002	-.00064	.4990	-.00043
4	"	.06108	"	.00077	.5036	.00030	.5020	.00051
5	"	.04948	"	.00136	.5070	.00065	.5050	.00136
10	"	.02701	"	.00214	.5240	.00091	.5200	.00111
20	"	.01682	"	.00254	.5580	.00086	.5500	.00110
30	"	.01485	"	.00298	.5920	.00080	.5800	.00108
40	"	.01733	"	.00396	.6260	.00063	.6100	.00105
45	"	.02374	"	.00538	.6430	.00030	.6250	.00094
46	"	.02654	"	.00597	.6460	.00016	.6280	.00088
47	"	.03132	"	.00684	.6498	-.00006	.6310	.00080
48	"	.03952	"	.00832	.6532	-.00039	.6340	.00069
49	"	.05907	"	.01155	.6566	-.00092	.6370	.00059
50	"	∞	"	.02615	.6600	-.00085	.6400	.00222

N = 100

i	c	Δy	c	Δy	c_1	Δy	c_2	Δy
1	0	.25284	0.5	-.04922	.4917	-.04210	.4915	-.04193
2	"	.11962	"	-.00642	.4934	-.00452	.4930	-.00440
3	"	.07856	"	-.00172	.4951	-.00086	.4945	-.00076
4	"	.05875	"	-.00036	.4968	.00004	.4960	.00014
5	"	.04710	"	.00022	.4985	.00037	.4975	.00046
10	"	.02438	"	.00092	.5070	.00059	.5050	.00068
20	"	.01342	"	.00112	.5240	.00052	.5200	.00062
40	"	.00840	"	.00128	.5580	.00046	.5500	.00057
60	"	.00743	"	.00150	.5920	.00041	.5800	.00055
80	"	.00871	"	.00199	.6260	.00031	.6100	.00052
90	"	.01202	"	.00272	.6430	.00010	.6250	.00043
95	"	.01786	"	.00382	.6515	-.00027	.6325	.00024
96	"	.02047	"	.00428	.6532	-.00044	.6340	.00015
97	"	.02449	"	.00497	.6549	-.00068	.6355	.00002
98	"	.03166	"	.00616	.6566	-.00105	.6370	-.00017
99	"	.04884	"	.00882	.6583	-.00169	.6385	-.00042
100	"	∞	"	.02133	.6600	-.00205	.6400	.00061

$\Delta y = \log \ln (N/(N - i + c)) - E(y_i)$;

$c_1 = 0.49 + 0.17\ i/N$;

$c_2 = 0.49 + 0.15\ i/N$

Table 7. Coefficients a_i, b_i of Linear, Unbiased, Minimum-Variance Estimators.

N = 2;	a_i =	-1.66096;	1.66096			
	b_i =	0.08363;	0.91637			
N = 3;	a_i =	-0.86284;	-0.58903;	1.45187		
	b_i =	0.08808;	0.25544;	0.65648		
N = 4;	a_i =	-0.57368;	-0.51327;	-0.19954;	1.28649	
	b_i =	0.07144;	0.15382;	0.26345;	0.51129	
N = 5;	a_i =	-0.42521;	-0.41712;	-0.29961;	-0.01793;	1.15987
	b_i =	0.05823;	0.10912;	0.16761;	0.24599;	0.41905
N = 10;	a_i =	-0.17971;	-0.19150;	-0.19162;	-0.17825;	-0.15030
		-0.11551;	-0.04784;	0.05246;	0.19757;	0.80470
	b_i =	0.02892;	0.04154;	0.05410;	0.06661;	0.08167
		0.09465;	0.11566;	0.13269;	0.16039;	0.22377
N = 20;	a_i =	-0.08120;	-0.08554;	-0.09139;	-0.09023;	-0.09163
		-0.08597;	-0.09289;	-0.07572;	-0.06694;	-0.07355
		-0.06482;	-0.03882;	-0.04135;	-0.00441;	-0.00121
		0.03706;	0.07121;	0.13719;	0.21221;	0.52800
	b_i =	0.01400;	0.01743;	0.02080;	0.02377;	0.02727
		0.02902;	0.03682;	0.03290;	0.03715;	0.04258
		0.05523;	0.04224;	0.06310;	0.05231;	0.06510
		0.06518;	0.07986;	0.08395;	0.09376;	0.11753

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13. ABSTRACT

Pertinent formulas for the confidence limits, expected values, variances and covariances of the order statistics $y_i = \log(z_i^m)$ have been developed and used for application of the generalized least-squares method, resulting in unbiased, minimum-variance estimates of the distribution parameters. Approximation formulas, based on simplified covariance matrices, have been proposed and examined. Extensive tables of the required statistics have been computed by use of an IBM 7090 computer and are presented.

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