Egyptology at the Dawn of the Twenty-first Century

Proceedings of the Eighth International Congress of Egyptologists Cairo, 2000

> Volume 2 History Religion

> > With a preface by Zahi Hawass

Egyptology Dawn ^{of the} Twenty-first Century [This page is intentionally blank.]



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> Volume 2 History Religion



Edited by Zahi Hawass

In collaboration with Lyla Pinch Brock

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Contents

Preface	xi
Zahi Hawass	
List of Abbreviations	xiv
Millennium Debate	
D. B. Redford	
The Writing of the History of Ancient Egypt	1
N. GRIMAL, Response	
W. J. MURNANE, Response	15
D. VALBELLE, Response	
Millennium Debate	
E. R. Russmann	
The State of Egyptology at the End of the Millennium: Art	23
S. DONADONI, Response	
M. Eaton-Krauss, Response	29
M. Müller, Response	32
S. Seidlmayer, Response	35
W. K. Simpson, Response	38
H. Sourouzian, Response	

Millennium Debate	
H. TE VELDE The History of the Study of Ancient Egyptian Religion and its Future P. J. FRANDSEN, Response E. WINTER Response	42 48 50
M. EL-ABBADI, On the Transmittance of Egyptian Learning into Greek	53
E. ABDEL AZIZ, Die Statue des <i>šn^{cc}-ib</i> : "Der Kabinettsvorsteher des Wesirs"	59
A. ABDEL-FATTAH, The Question of the Presence of Pharaonic Antiquities in the City of Alexandria and its Neighboring Sites (Alexandria pre-Alexander the Great)	
M. ABDEL GHANI, Antaiopolite Nome and its Administrative Changes under Roman Rule	
F. ABOU BAKR, The Role of Public Doctors in Ptolemaic and Roman Egypt	80
N. ALEXANIAN, Social Dimensions of Old Kingdom Mastaba Architecture	88
S. ALLAM, The Tax Exemption of Horemheb	
J. BECKER, Gangsysteme im Pyramidenbau des AR und ihre Funktion im Rahmen von Konstruktion und Bauausführung	103
G. A. BELOVA, The Eastern Borders of Egypt: New Data	113
E. BERNHAUER, Untersuchungen zur Privatplastik der 18. Dynastie	123
N. BILLING, Text and Tomb: Some Spatial Properties of Nut in the Pyramid Texts	129
A. S. VON BOMHARD, The Egyptian Calendar	
J. BOOR, World-Systems Theory and the Old Kingdom: A Test Case	146
M. CAMPAGNO, Another Reason for the Foundation of Memphis	154
J. DAS CANDEIAS SALES, Les monnaies de l'époque ptolemaïque au Portugal	160
J. CERVELLÓ-AUTUORI, Narmer, Menes, and the Seals from Abydos	168
M. CHERMETTE, Un page d'histoire de la nécropole thébaine	176

MÈ. COLIN, The Barque Sanctuary Project: Further Investigation of a Key Structure in the Egyptian Temple	181
A. Dodson, The Burial of Members of the Royal Family During the Eighteenth Dynasty	.187
M. EATON-KRAUSS, Restorations and Erasures in the Post-Amarna Period	194
F. EL-FAKHARANI, The Pharaonic Port on the Mediterranean: Its Shape, Development, and Importance	203
E. L. ERTMAN, The Identity of the King and Queen on Tutankhamun's Golden Throne	209
A. D. ESPINEL, The Boundary Stelae of Djoser's Funerary Complex at Saqqara An Interpretation through Artistic and Textual Evidence	: 215
J. M. GALÁN, Amenhotep Son of Hapu as Intermediary between the People and God	221
J. GEE, B3 Sending and Its Implications	230
K. GOEBS, Niswt nhh-Kingship, Cosmos, and Time	238
G. W. GOUDCHAUX, Bronze Statuettes of a Prince of Armenia	254
JCL. GOYON, Le rituel du <i>shtp shmt</i> au changement de cycle annuel. Sources et documents, un état des questions	261
L. GREEN, Beyond the Humors: Some Thoughts on Comparisons between Pharaonic and Greco-Roman Medicine	269
H. GYŐRY, Interaction of Magic and Science in Ancient Egyptian Medicine	276
M. HAGGAG, Two Religious Buildings at Byzantine Marea	284
N. B. HANSEN, Leaping Lizards! Poison Geckos in Ancient and Modern Egypt	290
M. K. HARTWIG, Style and Visual Rhetoric in Theban Tomb Painting	298
D. HEIDEN, New Aspects on the Treatment of the Cult Statue in the Daily Temple Ritual	308
P. HUBAI, Religionswechsel in Ägypten der Römerzeit	316

F. H. HUSSIEN, S. SHABAAN, Z. HAWASS, A. M. SARRY EL DIN, Anthropological Differences Between Workers and High Officials from the Old Kingdom at Giza	324
S. IVANOV, The Aegis in Ancient Egyptian Art: Aspects of Interpretation	332
E. KADOUS, Coptic Sculpture: The Popular Vision in Egyptian Art	340
M. KALOS, M. NELSON, La « chapelle de la reine blanche » à Thèbes-ouest: Nouvelles données sur l'histoire du site	346
S. EL-KHOLI, The Lost Colossus of the Mate of the Sphinx (Surriat Abu al-Haul)	352
P. I. KOUSOULIS, The Function of $hk3$ as a Mobilized Form in a Theological Environment: The Apotropaic "Ritual of Overthrowing Apophis"	362
R. KUPER, The Abu Ballas Trail: Pharaonic Advances into the Libyan Desert	
JPH. LAUER, Sur les figurations de <i>heb-sed</i> dans le complexe funéraire de la pyramide à Degrés	377
J. LINSTÄDTER, Systems of Prehistoric Land Use in the Gilf Kebir	381
M. J. LÓPEZ GRANDE, Winged Reshep: Egyptian Iconographic Evidence	389
G. MENCI, New Evidence for the Use of the Greek Reed Pen in the Hieratic Scripts of the Roman Period	397
S. EL-MENSHAWY, The Protocol of the Ancient Egyptian Royal Palace	400
D. NIEDZIÓLKA, On the Obelisks Mentioned in the Northampton Stela of Djehuti, Director of the Treasury during Hatshepsut's Reign	407
A. NIWINSKI, The Twenty-first Dynasty on the Eve of the Twenty-first Century	
R. A. OREHOV, Earthly Hathor and Heavenly Hathor	423
CH. ORSENIGO, Khay, Vizier of Ramses II: An Unknown Statue in a Private Collection and New Perspectives on His Role	428
J. PHILLIPS, Egypt, Nubia, and Ethiopia	434
G. PINCH, Redefining Funerary Objects	

C	0	n	t	e	n	ts	
0	U		L	C		13	

M. Poo, Egyptology and Comparative Ancient History	448
A. Rodrigo, An Ancient Mendesian Industry	455
G. ROULIN, God and Man: Formulas and Maxims on Seal Amulets	460
S. RZEPKA, Methods of Optimising Sculptors' Work During the Old Kingdom	467
A. M. SAIED, Chontiamenti oder Anubis	474
F. SALAH EL-DIN MOUSSA, Quelques aspects de la vie quotidienne représentés à Marea Byzantine	478
G. SCANDONE MATTHIAE, Les rapports entre Ebla et l'Egypte a l'Ancien et au Moyen Empire	487
F. SHARKAWI, The Egyptians in Greek Tragedy	494
M. A. SHATA, Damietta as a Gateway to Egypt in Ancient and Modern Times	
T. A. SHERKOVA, Seven Baboons in One Boat: The Interpretation of Iconography in the Context of the Cult Belonging to the Temple at Tell Ibrahim Awad	504
M. EL-SHIMY, Preparation and Use of Perfumes and Perfumed Substances in Ancient Egypt	509
A. Sugi, The Iconographical Representation of the Sun God in New Kingdom Egypt	514
E. G. TOLMATCHEVA, A Reconsideration of the Benu-bird in Egyptian Cosmogony	522
Z. TOPOZADA, Amasis à Memphis: détails sur le culte memphite d'Osiris et d'Isis	527
J. TRELLO, Traces of the "Beautiful Feast of the Valley" in Western Christian Tradition	_534
T. L. TUCKER, Z. HAWASS, Integrating History and Health for the Roman Period of Ancient Egypt	543
M ^a . R. Valdesogo Martin, Les cheveux des pleureuses dans le rituel funéraire égyptien. Le geste <i>nwn</i>	548

E. J. WALTERS, Women in the Cult of Isis at Hierakonopolis	
L. WATRIN, Lower-Upper Egyptian Interaction during the Pre-Naqada Period: From Initial Trade Contacts to the Ascendancy of Southern Chiefdoms	
S. A. YOUNIS, Psamtik I and Gyges: A Secret Alliance	
S. R. ZAKRZEWSKI, R. A. FOLEY, M. M. LAHR, Change and Continuity over the Predynastic and Early Dynastic Periods of Ancient Egypt	587
A. P. ZINGARELLI, Local Exchange in New Kingdom Egypt	
A. ZIVIE, R. LICHTENBERG, Les chats du Bubasteion de Saqqâra: Etat de la question et perspectives	
C. ZIVIE-COCHE, Tanis à l'époque ptolémaïque	594

Preface

Zahi Hawass

The Eighth International Congress of Egyptologists, held in Cairo in March 2000, marked the opening of the new millennium as an opportunity to evaluate and redefine the focus and goals of Egyptology in the twenty-first century. Through the Millennium Debates and the papers of other participants published here, we are made aware that now more than ever, Egyptology is facing a period of change and challenge and we must meet these challenges if our field is to remain relevant to the modern world. The Congress was attended by some 1,400 scholars, and of the 400 papers delivered, 248 were selected by our scientific review committee to be published in these volumes. It is notable that this Congress included a higher number of Egyptian Egyptologists than we have seen in many years. In fact, some 500 Egyptian Egyptology is an indication of one of the frequently mentioned themes in the Congress: the need for education and training of more Egyptian scholars and excavators to study and maintain their country's monuments as part of the world's heritage.

The enormous quantity of submissions to the Proceedings led to the decision to publish them in three volumes. Volume One contains all the archaeology papers; Volume Two, those dealing with history and religion; and Volume Three covers the topics of language, literature, museology, and conservation. Each volume of these Proceedings opens with the text of the corresponding Millennium Debates and their respondents, and the papers of the specific subjects follow in alphabetical order by the contributor's name.

The Millennium Debates formed a special focus for this Congress. Chaired and responded to by eminent experts in the field, the Debates covered archaeology, art, history, language, literature, museology, religion, site management, and conservation. In his paper (opening the Debates in Volume One) on "Egyptology in the Twenty-first Century," David O'Connor provides a cogent summary of the trends in field work in Egyptology in the last forty years and discusses three points crucial to the future of Egyptian archaeology: the changing attitudes of Egyptians toward their archaeology, the need for comprehensive mapping (rather than excavation) of the national archaeological landscape, and theoretical issues and their impact on archaeology, epigraphy, and other scholarly disciplines.

Volume Two continues with keynote speakers addressing the Millennium Debate issues of history, art history, and religion. In his paper, "Writing the History of Ancient Egypt," Donald B. Redford challenges the appropriateness of new approaches to historiography such as retrospective economic theory, Egyptology as anthropology, deconstruction, and 'history from below,' as he characterizes the tendency to use anecdotal evidence to draw far-reaching conclusions about the 'common people' in Egyptian history. Edna R. Russmann, in her contribution to the Millennium Debate on the study of the art of ancient Egypt laments the failure of Egyptian art scholarship to coalesce into a recognized subdiscipline with an academic tradition of acknowledged interests and methods of its own. She goes on to give a summary of the most urgent needs facing the study of Egyptian art as well as possible solutions. In the last Millennium Debate paper in Volume Two, Herman te Velde writes on "The History of the Study of Ancient Egyptian Religion and its Future," which he considers one of the most urgent topics in Egyptology today, since the core of ancient Egyptian culture is its religion. He speculates that although Egyptologists with various special interests will contribute to the study of religion, the most progress should be expected from those willing to focus their research specifically on religion and its accompanying issues, such as polytheism versus monotheism, pharaonism versus local religions, and religion in life as well as death.

Perhaps the most challenging of Millennium Debate papers come in Volume Three. John Baines' comprehensive examination of the current and future possibilities for research on Egyptian literature is complemented by Antonio Loprieno's notes on the problems and priorities in Egyptian linguistics. Baines provides extensive analysis and definition of the Egyptian literary corpus, its relation to the wider stream of tradition and range of written forms, and the social and ideological situation and status of what was written. Loprieno concentrates on the achievements of Egyptian linguistics over the last fifteen years and considers the impact of recent developments in linguistic research on Egyptian phonology and lexicography. Regine Schulz's paper, "Museums and Marketing: A Contradiction" is a timely examination of the pressures facing museums around the world to provide "blockbuster entertainment" while maintaining their five basic mandates of collecting, preservation, research, presentation, and mediation. Finally, my own contribution to the Millennium Debates, "Site Management and Conservation," addresses some of the principal problems and threats to the conservation of Egyptian heritage sites and makes recommendations, some perhaps controversial, for improving site management methods and protection as well as giving suggestions for salvage and excavation over the next ten years.

In addition to being a forum for debate and report, the Congress honored several prominent Egyptologists for their outstanding contributions to the field, including Abdel-Aziz Saleh and Sayed Tawfik from Egypt; Harry Smith of England; William K. Simpson from the United States; Rainer Stadelmann from Germany; Jean Leclant of France; Sergio Donadoni from Italy; Kazimierz Michalowski of Poland; and the late Gamal Mokhtar, former Chairman of the Antiquities Organization of Egypt and Member of the Supreme Council of Culture.

I took great pride in the many complimentary comments I received regarding the organization and success of the Eighth International Congress of Egyptologists, but credit for this must be shared with the many people whose efforts made that success possible. I would like to thank the members of the different committees who planned and executed the many aspects involved in holding such a large conference. The Congress was held at the Mena House Oberoi Hotel in the shadow of the Giza Pyramids and thanks to its General Manager, Rajiv Kaul, everything ran smoothly in the day-to-day operations. The Congress would also not have been possible without the financial support of many Egyptian business corporations. Another important contributor was the American University in Cairo Press. Its director, Mark Linz, and the Press's editorial staff were of great help in completing the Congress's mission by publishing the Abstracts, edited by Angela Jones, and of course these final three volumes of Proceedings edited in collaboration with Lyla Brock.

In conclusion, I would urge the International Association of Egyptologists to review and expand its activities in the future, with the aim of making itself better known to the general public and potential sponsors. This would enable it to raise the funds to undertake and complete valuable projects, many of which are discussed in these volumes. I would also urge that scientific studies and research programs should be geared less to the personal interests of the researcher, but should follow an overall action plan targeting those areas where monuments are especially endangered, such as the Delta and the great deserts of Egypt. I believe that all who participated in the Eighth International Congress of Egyptologists and all those who read these volumes of Proceedings will take wise and positive action in regard to these concerns.

Anthropological Differences Between Workers and High Officials from the Old Kingdom at Giza

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Introduction

The Old Kingdom is one of the most important periods in the history of Egypt and extends from the Third Dynasty to the end of the Sixth Dynasty. The term "Old Kingdom," is frequently synonymous with the time of the pyramid builders.¹ The Giza material presented here does not only belong to this very important population but also includes two different social classes from the same population; the high officials (hereafter G.W. for "Giza Western Cemetery for High Officials") and the workers (hereafter G.S.E. for "Giza South East Cemetery for Workers"). Comparison between the biological parameters of the high officials and workers can be interpreted as the effects of differences in social class.

Material

The material consists of two groups of individuals: The first is composed of 176 skeletons (G.W.) recovered from the Western Cemetery, the cemetery of high officials. These skeletons were obtained partially from the excavations carried out by the Hearst Expedition (1902–1945) directed by George Reisner. These were stored in a facility at Giza beside the Pyramids. This yielded 91 skeletons whose numbers where cross-matched with those on the carbon copy of the original packing lists of the tombs and mastabas and their human remains. The other part of this group, 85 skeletons, were recovered by the human remains study group of the National Research Center from the excavations of the Egyptian Antiquities Organization directed by Dr. Zahi Hawass (1989–1992). From the total of 176 skeletons from the Western Cemetery, six were badly broken, leaving 170 skeletons to be included in the study.

Methods

Sex determination of the skeletons was done using descriptive methods of both pelvis² and skull.³ The material was divided into subadults and adults according to closure of the spheno-occipital

synchondrosis which takes place between 18–21 years of age. When the skull was absent or the cranial base destroyed, complete union of the epiphyses of the long bones was the criterion of adulthood.⁴ Estimation of the age of subadults was carried out using dental development of diciduous teeth⁵ and the calcification and eruption of the permanent teeth using the tables made by Garn *et al.*⁶ Estimation of the age at death for adults was done using macroscopic methods based on auricular surface⁷ and symphysis publis metamorphosis.⁸ Measurements on crania and long bones were done using the landmarks, instruments, and techniques described by Montague.⁹ Degenerative changes in the spine and large joints were also noted.

Results and discussion

Social differences do not always accompany certain types of work, but the workmen in this study were those who were involved in building the pyramids, which meant they probably suffered great physical stress. Some authors claim they were involved in pyramid building only on a seasonal basis, while doing other works during the rest of the year. According to Hawass¹⁰ some of them were settlers, but their demographics show them to be permanent settlers with a considerable number of subadults and females, including a pregnant woman. As for high officials, 52.59 percent are males and 47.40 percent are females, while workers are 50 percent male and 50 percent female. The percentages of subadults among high officials and workers are 5.29 percent and 23.68 percent respectively. In many other skeletal series, the percentages of subadults are low: 12.3 percent were found by Smith and Jones¹¹ in predynastic excavations in Egyptian Nubia. Nielsen¹² found 18.4 percent subadults in the Nubian C-group. Also, low infant mortality was found in ancient Greece.¹³

Nine cranial measurements and two indices were compared and no differences were detected. Also, 16 postcranial measurements showed a similarity between the workers and the high officials groups. The two skeletal series are from the same site and period; this, together with the similarity of the studied cranial and postcranial parameters, proves the uniformity of the Giza population.

Group	Age in years	18–20	20-24	25-29	30-34	35-39	40-44	45-50	50-60	60+	unknown
G.W.	N 81	0	1	2	13	16	17	8	11	9	4
	%	0.00	1.23	2.46	16.04	19.75	20.98	9.87	13.58	11.11	4.93
G.S.E.	N 29	3	1	2	6	4	5	3	3	0	2
	%	10.34	3.44	6.89	20.68	13.79	17.24	10.34	10.34	0.00	6.98

Group	Age in years	18-20	20-24	25-29	30-34	35-39	40-44	45-50	50-60	60+	unknown
G.W.	N 73	1	6	5	9	5	15	12	11	9	0
	%	1.36	8.21	6.84	12.32	6.84	20.54	16.43	15.06	12.32	0.00
G.S.E.	N 29	2	2	3	5	8	3	2	1	1	2
	%	6.89	6.89	10.34	17.24	27.58	10.34	6.89	3.44	3.44	6.89

Table 1: Age distribution of G.W. and G.S.E. adult males.

Table 2: Age distribution of G.W. and G.S.E. adult females.

Longevity is affected to a great extent by social conditions. The mortality of males is highest in the age group 40–44 years in G.W. and 30–35 years in the G.S.E. (Table 1). Similarly, the highest percentages of the G.W. female skeletons is from the age group 40–44 years and in the G.S.E. is in a lower age interval, 35–39 years (Table 2). A major factor in the variation in mortality of different human populations is the conditions of health.¹⁴ Earlier age at death of the G.S.E. group may be attributed to their poorer health status. Further evidence of poorer health in G.S.E. than G.W is the increased mortality of young women below the age of 30 years: 24.13 percent in G.S.E. and only 16.14 percent in G.W. This may be attributed to more complications related to child bearing in G.S.E. females than in G.W. females.

Social class not only affects longevity but also the person's general state of health, manifesting itself in several ways. An important reflection of social class is stature.

SEX	MA	ALE .	FEM	ALE
Group	G.W.	G.S.E.	G.W.	G.S.E.
N	43	11	32	9
\overline{X}	168.17	164.85	153.79	150.53
SD	4.16	3.31	4.50	3.66
SE	0.63	1.00	0.79	1.22

Table 3: Mean (\overline{X}) stature, standard deviation (SD) and standard error (SE) of G.W. and G.S.E. males and females.

Stature was estimated using the maximum length of the femur in the negro equation of Trotter and Glesser.¹⁵ The length of the lower limb long bones are more highly correlated with stature than are the lengths of upper limb long bones, and the femur has the highest correlation.¹⁶ This equation was based on the lengths of modern North American subjects calculated for whites and blacks, separately. To achieve consistent estimates of stature the limb and trunk proportions of the ancient skeletons should be similar to those of the modern population on which the formulae were based. Applying the negro formula does not mean that the ancient Egyptians were negros. Indeed, representations in Egyptian art distinguished their own facial features and skin colors from those of the people from the south (Nubia).¹⁷ However, they expressed their physical proportions with relatively long limbs compared with the trunk, and long distal limb segments compared with the proximal ones. These physical proportions are more like those of modern blacks than those of modern whites. Formicola, 18 and Formicola, Robbins, and Chute¹⁹ favored the use of the negro formulae of Trotter and Glesser when estimating stature of ancient populations. Both nutrition and health are the two main factors affecting growth and ultimately stature. The mean stature of the high officials exceeded that of the workers of both sexes, with significant differences. Reduction is mainly in the proximal segments of the limbs; particularly the humerus and femur. These long bones have maximum accelerated growth during puberty, which is a very sensitive period for environmental adverse effects.

		G.W.				G.S	S.E.	
AGE GROUP SPINAL REG.	20-30	30-40	40-50	50+	20-30	30-40	40-50	50+
C.V.	N=18	N=142	N=150	N=86	N=35	N=54	N=46	N=33
Mild		8 5.63%	15 10.00%			3 7.40%		
Moderate		14 9.85%	11 7.33%	7 8.15%		3 5.55%		
Severe		17 11.97%	28 18.66%	12 13.95%			15 32.60%	15 45.45%
Th.V.	N=36	N=258	N=234	N=199	N=58	N=113	N=83	N=43
Mild	1 2.77%	33 12.79%	34 14.5 2 %	31 15.5 7 %		14 12.38%	2 2.40%	
Moderate		1 0.38%	15 6.41%	34 17.08%		9 7.96%	4 4.81%	
Severe		1 0.38%	17 7.26%	13 6.53%		4 3.53%	24 28.91%	25 58.13%
L.V.	N=13	N=119	N=111	N=86	N=25	N=48	N=40	N=22
Mild		32 26.89%	19 17.11%	19 22.09%	2 8.00%	8 16.66%		
Moderate		12 10.08%	13 11.71%	20 23.25%		3 6.25%	1 2.50%	
Severe		6 4.22%	24 21.62%	14 16.27%		3 6.25%	25 62.50%	14 63.63%

Table 4: Numbers and percentages of osteoarthritic vertebrae in G.W. and G.S.E. males.

		G.W.			G.S.E.				
AGE GROUP SPINAL REG.	20-30	30-40	40-50	50+	20-30	30-40	40-50	50+	
C.V.	N=34	N=79	N=132	N=97	N=46	N=80	N=34	N=22	
Mild			23 17.42%	8 8.24%					
Moderate			15 11.36%	10 10.30%		2 2.50%			
Severe		2 2.53%	6 4.54%	13 13.40%		12 15.00%	20 58.82%	8 36.36%	
Th.V.	N=48	N=133	N=223	N=168	N=77	N=134	N=44	N=25	
Mild		7 5.26%	25 11.21%	31 18.55%				6 24.00%	
Moderate		11 8.27%	24 10.76%	6 3.57%		8 5.97%	4 9.09%	4 16.00%	

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Severe		2		20		6	9	9
		1.50%		11.90%		4.47%	20.45%	36.00%
L.V.	N=24	N=58	N=112	N=87	N=33	N=60	N=23	N=8
Mild	3 12.50%	17 29.31%	21 18.75%	19 21.83%	1 3.03%			
Moderate	2 8.33%	4 6.89%	18 16.07%	26 29.88%		5 8.33%	4 17.39%	
Severe		4 6.89%	13 11.60%	18 20.68%		13 21.66%	10 43.47%	2 25.00%

Table 5: Numbers and percentage of osteoarthritic vertebrae of G.W. and G.S.E. females.

		G.W.			12			
JOINT AGES IN YEARS	Shoulder	Elbow	Нір	Knee	Shoulder	Elbow	Нір	Knee
20->30	6 0.00	4 0.00	5 0.00	3 0.00	10 2 20.00%	8 0.00	10 0.00	8 0.00
30->40	52 5 9.61%	55 10 18.18%	56 9 16.07%	51 5 9.80%	13 8 61.53%	16 6 37.50%	16 6 37.50%	14 8 57.14%
40->50	45 14 31.11%	40 8 20.00%	45 10 22.22%	40 8 20.22%	12 8 66.66%	18 8 44.44%	13 7 53.84%	14 9 64.28%
50+	29 27 93.10%	30 14 46.66%	33 22 66.66%	27 14 51.85%	2 2 100.00%	4 2 50.00%	3 0.00	3 3 100.00%

Table 6: Degenerative arthritis in the large joints in G.W. and G.S.E. males according to age distribution

G.W.					G.S.E.				
JOINT AGES IN YEARS	Shoulder	Elbow	Hip	Knee	Shoulder	Elbow	Нір	Knee	
20->30	15 0.00	17 0.00	19 0.00	14 0.00	10 0.00	14 0.00	10 0.00	9 0.00	
30->40	16 2 12.50%	14 0.00%	15 4 26.66%	15 0.00%	17 8 47.05%	26 4 15.38%	18 4 22.22%	12 2 16.66%	
40->50	43 8 18.60%	45 4 8.88%	48 12 25.00%	36 0.00	5 2 40.00%	8 4 50.00%	5 4 80.00%	5 3 60.00%	
50+	28 4 14.28	28 5 17.85	30 4 13.33	27 2 7.40	1 0.00	3 2 66.66	2 0.00	2 2 100.00	

 Table 7: Degenerative arthritis of large joints of G.W. and G.S.E. females according to age distribution.

Physical stress shows itself in skeletal material as arthritic changes occurring below the age of 30–35 years and which may be attributed to more than simple aging processes, osteoarthroses, vertebral compression, and Schmoral's nodes.²⁰

Degenerative changes of the vertebral bodies were a common finding in the studied material. Wood Jones, Ruffer and Rietti, and Ruffer²¹ reported that vertebral column osteoarthritis existed in Egypt and Nubia in different sites from the earliest times until the Christian period. Not only in ancient Egypt and Nubia, but also in nearly all paleopathological examinations from all over the world, osteoarthritis is commonly found. The affected vertebrae in the G.W. group of both sexes are either mildly, moderately, or severely affected, while in the G.S.E. group, most of the affected vertebrae are severely affected. The main difference between G.W. and G.S.E. males lies in the more frequent severely affected vertebrae in G.S.E. (Table 4). This increase in the percentage of the severely affected vertebrae is at the expense of decreased or absent mild and moderately affected vertebrae. However, the difference between the severely affected vertebrae in the two groups is insignificant in the cervical region and significant in both the thoracic and lumbar regions. In the female groups (Table 5), the differences in the cervical and thoracic regions are significant, while not significant in the lumbar region.

Differences between the two groups appear mostly in the lumbar region. In males 13.37 percent and 31.11 percent of the lumbar vertebrae were severely affected in G.W. and G.S.E. respectively. In females, the severely affected lumbar vertebrae were 12.45 percent in G.W. while in G.S.E. they were 22.16 percent. The percentages are similar in the females of both groups. The percentages of osteoarthritis in males in both groups is higher than those in the females, and the male-female difference is greater in G.S.E. Bourke²² examined 244 vertebral columns from ancient Egypt and Nubia, from the Duckworth Skeletal Collection preserved in the Physical Anthropology Department of Cambridge University and found that the greatest incidence and severity of the disease occurred in the lumbar region.

The expressions of spinal degenerative joint disease are multifactorial. There are age-related biochemical changes in disc and cartilage tissues. But pressure from weight-bearing and movement interacts with these age changes, as movement is an important factor and the range of motions varies throughout the spine. The pattern of distribution of the spinal degenerative joint disease reflects the complex interaction of stresses related to weight bearing and movement in an upright posture.²³

Degenerative joint diseases are also seen in the large joints of G.W. and G.S.E. (Tables 6 and 7). However, large joint affection was more common in G.S.E. than G.W. and the main difference was in the knee joints. Not only is the frequency of large joint affection higher in both sexes of G.S.E. than in G.W., but also the degree of affection is more advanced in the former group than in the latter. There are also sex differences in favor of males in which the four joints are more affected than in the females. No factor is the single primary focus in the etiology of degenerative diseases of the large joints and both biological age and sex play an important role.²⁴ In the report on the paleopathology in Nubia, Nielsen²⁵ concluded that degenerative changes of the vertebral column and large joints are frequent even in younger age groups, who mostly show advanced stages of the lesions.

Notes:

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